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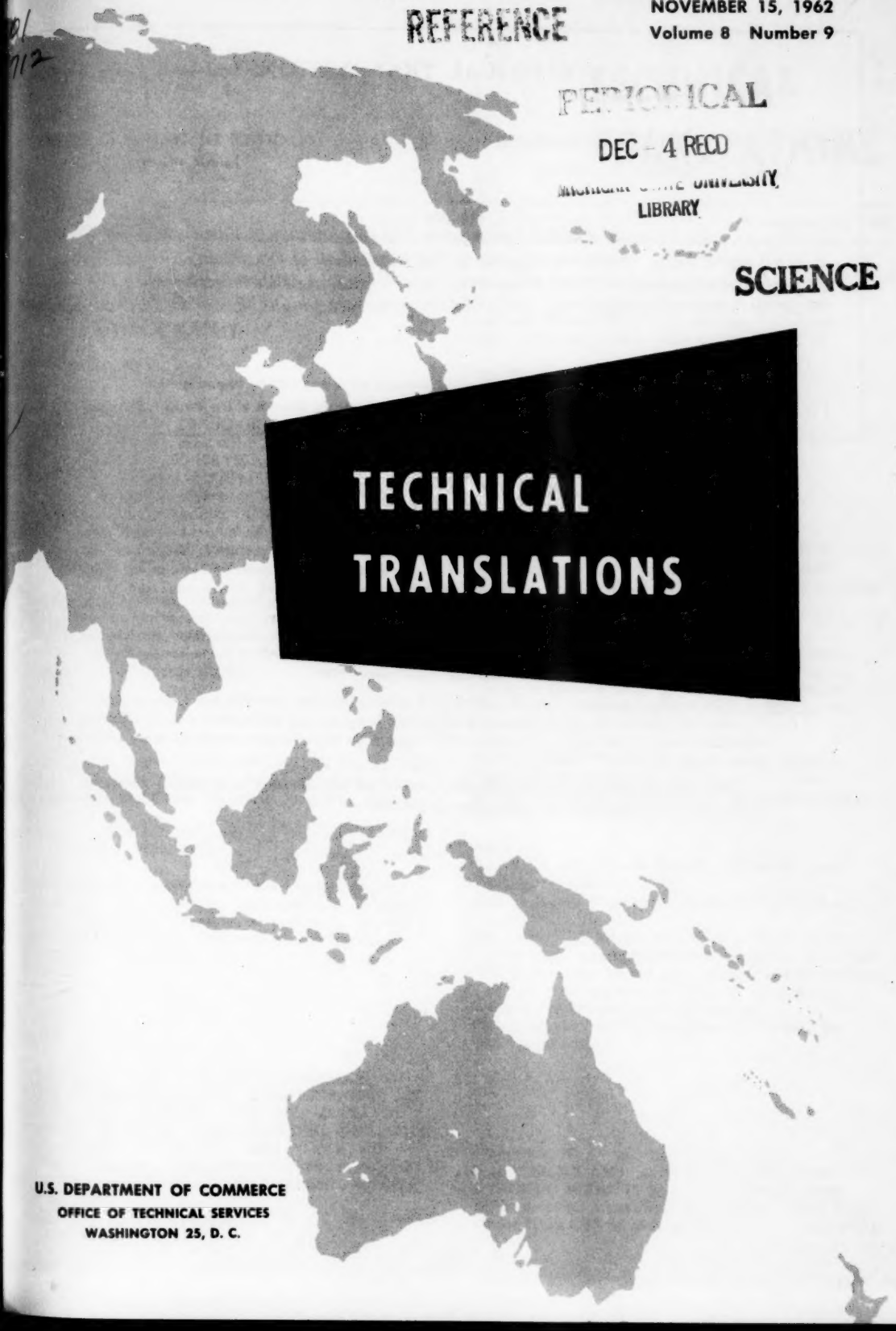

TECHNICAL TRANSLATIONS

U.S. DEPARTMENT OF COMMERCE
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TECHNICAL TRANSLATIONS

U.S. DEPARTMENT OF COMMERCE
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Use of funds for printing this publication approved by the Director of the Bureau of the Budget, November 22, 1961

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TECHNICAL TRANSLATIONS

Volume 8, Number 9 Pages 839-939 November 15, 1962

*Descriptors marked with an asterik are included in the subject index.

BIBLIOGRAPHY

COMMUNICATIONS, TRANSPORTATION, NAVIGATION, ELECTRICAL AND ELECTRONIC EQUIPMENT, SYSTEMS AND DEVICES, INCLUDING AIRCRAFT AND MISSILE EQUIPMENT, NO. 19. Series 5 of English Abstracts of Selected Articles from Soviet Bloc and Mainland China Technical Journals. Aug 62,
Order from OTS $25.00/year 61-11144-19
foreign $32.00/year

DESCRIPTORS: China, Communication systems, Transportation, Electrical equipment, *Electronic equipment, Aircraft, *Abstracts, Missiles.

Consists of abstracts in English.

GEOPHYSICS AND ASTRONOMY, NO. 1. Series 7 of English Abstracts of Selected Articles from Soviet Bloc and Mainland China Technical Journals. Aug 62, 60p.
Order from OTS $25.00/year 62-11703-1
foreign $32.00/year

DESCRIPTORS: *Geophysics, *Astronomy, Atmosphere, Geodesy, Geography, Astrophysics, Geology, Mining engineering, Mapping, Meteorology, Earthquakes, Oceanography, Explosions, Cosmic rays, Periodicals, *Abstracts, China.

GENERAL SCIENCE AND MISCELLANEOUS, INCLUDING METEOROLOGY, OCEANOGRAPHY, BIOLOGY, ASTROBIOLOGY, BOTANY, ZOOLOGY, MEDICAL SCIENCE, AEROMEDICINE, EDUCATION, FUELS, FUEL PRODUCTS, AND POWER, NO. 19, Series 6 of English Abstracts of Selected articles from Soviet Bloc and Mainland China Technical Journals. Aug 62, 30p.
Order from OTS $25.00/year 61-11145-19
foreign $32.00/year

DESCRIPTORS: *Meteorology, *Oceanography, *Biology, *Fuels, Medical research, Aviation medicine, Education, Plants, Scientific reports, Space medicine, Power, *Abstracts, China.

Consists of abstracts in English.

AGRICULTURE

SOVIET INDUSTRIAL DEVELOPMENT: [SELECTED] TRANSLATIONS ON SOVIET TRACTORS AND AGRICULTURAL MACHINERY (33). 1 Aug 62 [25]p. JPRS: 14693.
Order from OTS or SLA $2.60 62-32203

Trans. from Zarya Vostoka (USSR) 1962, 14 May; Sovetskaya Rossiya (USSR) 1962, 15 Mar; Pravda, Leningrad (USSR) 1962, 31 Mar; Izvestiya (USSR) 1962, 10 Apr; Sovetskaya Belorussiya (USSR) 1962, 3 Mar; 10 Mar.

DESCRIPTORS: *Industrial production, *Tractors, *Agricultural machinery, Mountains, Terrain, Milking machines, Maintenance, *Internal combustion engines, *Trailers.

Contents:
The small, all-purpose "Rioni" tractor for mountainous terrain
Improvements made in the production of farm equipment
The "Kirovets" all-purpose tractor should be the pride of the Leningrad tractor builders, by I. Isaev
The maintenance on the D-54 tractor is not meeting our current requirements, by N. Velichkin
Spare parts difficulties in Belorussia
New Bobruysk farm-trailer plant in trouble, by M. Kapel'chik.

Egorova, V. D. and Zubchenkov, V. I.
TREATMENT AND PROPHYLAXIS OF INFECTIOUS ATROPHIC RHINITIS (O Lechenii i Profilaktike Infektsionnogo Atroficheskogo Rinita). [1962] [5]p.
Order from OTS or SLA $1.10 62-14851

Trans. of Veterinariya (USSR) 1962, v. 39, no. 1, p. 41-42.

DESCRIPTORS: *Infections, Inflammation, *Nose (Anatomy), *Swine, *Antibiotics, Terramycin, Tetracyclines, Biomycin, Bone, Pathology.

Mycerin, biomycin, and terramycin prevent the appearance of symptoms of infectious atrophic rhinitis in suckling pigs, mycerin producing the best prophylactic effects. In young pigs at an age following the separation from the mother, affected with rhinitis, biomycin produces a sharp reduction in the incidence of distortions of the bones of the upper jaw, and prevents the appearance of complications of the main disease, and raises considerably the values of mean daily weight increases. Administration of terramycin to presumably healthy pigs separated from the mothers prevents the development of distortions of the bones of the upper jaw. (Author)

Plant Cultivation

Babii, P. T. and Sokolov, V. M.
DISENO DE UN CULTIVADOR ROTAVITO PARA SUELOS TURBO-PANTANOSOS) (K Sozdaniyu Rotatsionnogo Kul'tivatora dlya Torfyano-bolotnykh Pochv). (Design of a Rotating Cultivating Machine for Peat-marshy Soils). 20p. 9 refs. CID: 62-2. (text in Spanish).
Order from OTS or ETC $1.40 62-26202

Trans. of Traktory i Sel'khozmashiny (USSR) 1958, no. 3, p. 21-25.

DESCRIPTORS: Soils, Swamps, *Agriculture, *Machines.

Babin, E. P.
INFLUENCIA DEL CLORURO DE ZINC ANHIDRO SOBRE EL ACEITE DE SEMILLAS DE ALGODON A ALTAS TEMPERATURAS (Vliyanie Bezvodnogo Khloristogo Tsinka na Khlopkovoe Maslo pri Povyshennykh Temperaturakh) (Influence of Anhydrous Zinc Chloride on Cotton-seed Oil at High Temperatures). 10p. CID: 62-24. (text in Spanish).
Order from OTS or ETC $1.- 62-26224

Trans. of Zhurnal Prikladnoi Khimii (USSR) 1954, v. 27, no. 4, p. 463-465.

DESCRIPTORS: *Vegetable oils, Heat of Reaction, *Zinc compounds, Chlorides.

Balev, P. M. and Karastoyanova, R. S.
SOBRE EL PAPEL DE LAS PLANTAS Y FERTILIZANTES EN EL AUMENTO DE LA FERTILIDAD DEL SUELO (O Roli Rastenii i Udobrenii v Povyshenii Plodorodiya Pochvy) (On the Role of Plants and Fertilisers in the Increase of Soil Fertility) 27p. 22 refs. CID 62-29. (text in Spanish).
Order from OTS or ETC $1.75 62-26229

Trans. of Pochvovedenie (USSR) 1957, no. 11, p. 80-88

DESCRIPTORS: Soils, *Fertilizers, Plants (Botany).

Burzy, K. E., Damaskina, A. S. and others.
INFLUENCIA DE LAS HIERBAS PERENNES SOBRE LA FERTILIDAD DEL SUELO (Vliyanie Mnogoletnikh Trav na Plodorodie Pochvy) (Influence of Perennial Herbs on Soil Fertility). 21p. CID: 62-52. (text in Spanish).
Order from OTS or ETC $1.50 62-26252

Trans. of Pochvovedenie (USSR) 1957, no. 10, p. 80-85

DESCRIPTORS: *Grasses, Soils, Fertilizers.

Heusser, Carl.
TYPES OF FLOWERS OF TOBACCO VARIETIES CULTIVATED TODAY IN SWITZERLAND. [1962] 40p.
Order from K-H $50.00 K-H 3097-a

Trans. of Schweiz[erische] Bot[anische] Ges[ellschaft] Ber[ichte] 1952, v. 62, p. 509-526.

DESCRIPTORS: *Tobacco, *Plants. Switzerland.

Varlamov, G. P.
SEPARADOR DE SEMILLAS DE LAS CUCURBITACEAS VSB-3 (Vydelitel' Semyan Bakhchevykh Kul'tur VSB-3) (Cucurbitaceae Seed Separator). 11p. (foreign text included). CID: 62-59. (text in Spanish).
Order from OTS or ETC $1.05 62-26259

Trans. of Traktory i Sel'khozmashiny (USSR) 1958, no. 1, p. 24-25.

DESCRIPTORS: *Seeds, Plants.

ASTRONOMY

Astrophysics

Cherednichenko, V. I.
THE ROLE OF SOLAR CORPUSCULAR AND PHOTON RADIATION IN THE FLASHES OF BRIGHTNESS OF COMETS. 7 May 62 [17]p. 18 refs. FTD-TT-62-179; AD-277 645.
Order from OTS or SLA $1.60 62-25823

Unedited rough draft trans. of Akademiya Nauk URSR, Kiev. Holovna Astronomichna Observatoriya. Izvestiya, 1960, v. 3, no. 1, p. 94-104.

DESCRIPTORS: *Comets, Brightness, Solar energy, *Photons, Velocity, Density.

An analysis shows that solar photon radiation is not likely to be the cause of the sharp variations in brightness of the Schwassmann-Wachmann 1925 II comet. It is suggested that the decreases in brightness, particularly that of March 1934, occurred when the comet entered corpuscular streams having very high velocities and particle densities, causing strong ionization in the comet atmosphere. Derivations are made of the value of the proton stream of the solar corpuscular field according to the least brightness of the comet. The connection is shown between the values of the increases in brightness of comets and the velocity and concentration of the corpuscular streams causing these increases.

Fesenkov, V. G.
THE BEGINNING OF A NEW ERA IN THE STUDY OF SPACE. 13 Feb 62 [13]p. 2 refs. JPRS: 12442.
Order from OTS or SLA $1.60 62-15933

Trans. of Priroda (USSR) 1961 [v. 50] no. 6, p. 3-5.

DESCRIPTORS: Manned, *Space flight, Astronautics, Interstellar matter, Night sky, Brightness, Meteorites, Cosmic rays, *Astrophysics.

Ikhsanova, V. N. and Lesnik, G. E.
SOME OBSERVATIONAL RESULTS ON THE TWO-DIMENSIONAL RADIO BRIGHTNESS DISTRIBUTION OVER SOLAR DISK AT A WAVELENGTH OF 3.15 cm., tr. by P. A. Kazakov. [1962] 3p. 4 refs. [CSIRO Trans. no.] 5791.
Order from OTS or SLA $1.10 62-24628

Trans. of Solnechnye Dannye (USSR) 1961, no. 1, p. 66-69.

DESCRIPTORS: *Radio astronomy, *Radio signals, Sun, Extraterrestrial radio waves, Solar corona, Brightness, Disks.

Krasovskii, V. I., ed.
SPECTRAL, ELECTROPHOTOMETRICAL AND RADAR RESEARCHES OF AURORAE AND AIRGLOW (Spektral'nye Elektrofotometricheskie i Radiolokatsionnye Issledovaniya Polyarnykh Siyanii i Svecheniya Nochnogo Neba). Apr 62, 36p. 68 refs. NASA Technical trans. F-76; AD-274 324.
Order from OTS $1.00 62-11653

Trans. of [Polyarnye Siyaniya i Svechenie Nochnogo Neba: Sbornik Statei] (USSR) 1959, no. 1.
Other translations are available from LC or SLA mi-$3.90, ph$10.80 as 59-22584, AmMetSoc-T-RC-14, July 59 [64]p. and mi$4.50, ph$12.30 as 60-15674, MCL-243 Oct 59 [78]p.

DESCRIPTORS: *Aurorae, *Spectrographic analysis, Measurement, Spectrophotometers, Hydrogen, Radio signals, Reflection, *Sky brightness.
Contents:
Hydrogen emission and two types of auroral spectra, by Yu. I. Gal'perin
Observation of the aurora on 10-11 Feb 58 near Moscow, by A. V. Mironov and others
Intensity of some emissions of the twilight and night sky, by N. N. Shefov
Electrophotometric measurements in the auroral zone, by N. V. Dzhordzhio
An attempt at interferometrical study of auroral emission lines, by T. M. Mulyarchik
On the observations of the line λ 6562 Å in the spectrum of the night sky, by V. S. Prokudina
Some results of spectroscopic investigations of auroral and night glow spectra, by F. K. Shuyskaya.

Mandel'shtam, S. L., Tindo, I. P. and others.
INVESTIGATION OF SOLAR X-RADIATION. I. MEASUREMENTS MADE BY GEOPHYSICAL ROCKETS. [1962] 13p. (11 figs. omitted) 20 refs.
Order from OTS or SLA $1.60 62-14228

Trans. of unidentified article pub. of Academy of Sciences USSR, Lebedev Institute of Physics, Spectroscopy Lab., n.d.

DESCRIPTORS: *Cosmic rays, Extraterrestrial radio waves, X-rays, Intensity, Measurement, Spaceships, *Sounding rockets, Launching, Astrophysics, Spectrographic analysis.

Results are given of measurements of the intensity of solar X-radiation in the spectral region shorter than 10 Angstroms during two vertical launchings of geophysical rockets to a height of about 100 km and the second and third cosmic spaceships.

Mandel'shtam, S. L., Tindo, I. P. and others.
INVESTIGATION OF SOLAR X-RADIATION. II. MEASUREMENTS MADE BY COSMIC SPACESHIP. [1962] [13]p. (10 figs. omitted) 8 refs.
Order from OTS or SLA $1.60 62-14227

Trans. of unidentified article pub. of Academy of Sciences USSR, Lebedev Institute of Physics, Spectroscopy Lab., n.d.

DESCRIPTORS: *Cosmic rays, Extraterrestrial radio waves, X-rays, Intensity, Measurement, Spaceships, *Sounding rockets, Launching, Astrophysics, Spectrographic analysis.

Results are given of measurements of solar x-ray intensities in the same spectral region taken during the 19-20 August and the 1-2 December 1960 flights of the second and third cosmic spaceships. The goal of the measurements was investigation of the intensity of radiation over a period of time on the order of 24 hours. (Author) (See also 62-14228)

Mandel'shtam, S. L., Voron'ko, Y. K. and others.
INVESTIGATION OF X-RAY RADIATION OF THE SUN DURING THE FULL SOLAR ECLIPSE OF 15 FEB 61. [1962] 6p. (4 figs. 1 tables omitted) 8 refs.
Order from OTS or SLA $1.10 62-14226

Trans. of unidentified article pub. of Academy of Sciences USSR, Lebedev Institute of Physics, Spectroscopy Lab., n.d.

DESCRIPTORS: *Solar eclipse, Sun, X-rays, Spectrographic analysis, Sounding rockets.

Results are given of measurements of solar x-radiation in the spectrum region shorter than 10 Angstroms in the total phase of the eclipse, during the flight of a geophysical rocket to a height of about 96 km. (Author)

Pisareva, V. V.
ON THE VARIATIONS OF THE INTENSITY OF RADIO EMISSION SCATTERED ON CORONAL NON-UNIFORMITIES. [1962] [14]p. 12 refs. [USASIA]
Trans. Log no. 1173.
Order from OTS or SLA $1.60 62-32653

Trans. of #Astronomicheskii Zhurnal (USSR) 1959, v. 36, no. 3, p. 427-[433].

DESCRIPTORS: *Solar corona, *Radio signals, *Radio astronomy, Propagation, Extraterrestrial radio waves, Diffraction, Intensity

Simultaneous observations of solar radio emission on 206 mc made at two stations, distant in longitude (Gorky and Irkutsk) are described. They were made in order to detect intensity fluctuations with a diffraction origin. The observations did not reveal such fluctuations for a measurement precision to 2% from the mean level of solar radio emission. This circumstance may be connected with the sources of radio emission on the Sun having too large angular dimensions. It is shown that observations with an antenna having an effective area in the order of 200 m^2 and equipment with a fluctuation threshold of sensitivity of 2^0 for a time constant of 1 sec could have led to the detection of such fluctuations even for wide-angle sources. The variation of distribution with the angle of the radiation, passing through a layer with non-uniformities, as a function of the distance from the observer to the layer is considered. The derived results are applied to the scattering of the radio emission of Tauri A on coronal non-uniformities. It is shown that at large distances from the Sun's center the apparent increase in the size of the source cannot be explained by scattering on coronal rays. It is necessary to assume that there are also smaller non-uniformities in the corona. (Author)

Pokrovskii, G.
FLIGHTS TO THE MOON, MARS, AND VENUS.
17 Apr 62 [11]p. FTD-TT-62-553.
Order from OTS or SLA $1.60 62-25556

Unedited rough draft trans. of Kryl'ya Rodiny (USSR) 1961, no. 11, p. 22-23.

DESCRIPTORS: *Space flight, Space navigation, Astronautics, Spaceships, *Moon, *Mars, *Venus, Celestial mechanics, *Orbital flight paths.

Shklovskii, I. S.
ARTIFICIAL SATELLITES OF MARS [AND] RIDDLE OF THE MARTIAN SATELLITES.
18 May 62 [12]p. FTD-TT-62-488.
Order from OTS or SLA $1.60 62-25847

Unedited rough draft trans. from Komsomol'skaya Pravda (USSR) 1959, 1 May ## [p. 6] and 31 May. ##Another trans. is available from LC or SLA mi$1.80, ph$1.80 as 59-16966, AF-1 255 838, 27 May 59 [5]p.

DESCRIPTORS: *Mars, *Artificial planetoids, Velocity, Theory.

The first paper is a translation of an interview wherein Shklovskii proposes the hypothesis that the two satellites of Mars (Phobos and Deimos) are of artificial origin. This theory is originated to explain the abnormalities in the motion of one of the satellites. In the second paper Shklovskii relates how his hypothesis was received by the international scientific community. Generally, he reports, the opinion of scientists was divided. In the Soviet Union, Sedov, Ginzburg, Krasovskiy, Lebedev, and Stanyukovich gave it a favorable reception, while Fesenkov received it with scepticism. In the USA the astronomers at the Naval Observatory and Professor Singer supported it, while Gerald Clemence, Gerard Kuiper, and Dr. Slipher opposed it.

Stanyukovich, K. P.
THE SYSTEM OF SHOCK WAVES GENERATED BY THE FALL AND EXPLOSION OF METEORITES (Sistema Vozdushnykh Udarnykh Voln pri Polete i Vzryve Meteoritov). [1961] [16]p. 5 refs.
Order from OTS or SLA $1.60 62-10164

Trans. of Meteoritika (USSR) 1956, v. 14, p. 62-69.
Other translations are available from LC or SLA mi$2.40, ph$3.30 as 59-20920 [1959] [13]p. and from OTS $1.60 as AD-266 178, STL-TR-61-5110-50, Oct 61, 14p.

DESCRIPTORS: *Meteorites, *Shock waves, *Impact shock, Explosions, Falling bodies, Flight paths, Detonation waves, Ballistics, Wave transmission, Air, Pressure, Density, Volume, Motion, Velocity, Equations, Energy, *Mathematical analysis.
A mathematical analysis is given of the shock waves propagated by falling and impacting meteorites. Strong shock waves are generated by a meteorite during its fall since its velocity is nearly always above the local speed of sound. Meteorites which reach the earth's surface disintegrate upon impact; a detonation shock wave is then generated propagating from the c center of the explosion. This wave may interact with the ballistic shock wave propagated from the trajectory of the fallen meteorite.

Vernov, S. N., Vakulov, P. V. and others.
INVESTIGATION OF THE SOFT COMPONENT OF COSMIC RAYS BEYOND THE LIMITS OF THE ATMOSPHERE (Izuchenie Myagkoi Komponenty Kosmicheskikh Luchei za Predelami Atmosfery). [1962] [20]p. (foreign text included).
Order from OTS or SLA $1.60 62-14012

Trans. of Iskusstvennye Sputniki Zemli (USSR) 1958 [v. 2] p. 61-69.

DESCRIPTORS: *Satellite vehicle research, *Radiation counters, *Photons, *Cosmic rays, Gamma rays, Electrons, Solar radiation.

Guttman, Louis.
THE DEVELOPMENT OF SCALE ANALYSIS. A PERSONAL ACCOUNT. [1962] 7p. 11 refs.
Order from SLA $1.10 62-18063

Trans. of Revue de Psychologie Appliquee (France) 1960, v. 10, no. 2, p. 93-100.

DESCRIPTORS: *Sociology, *Psychology, *Sociometrics, *Psychometrics, Statistical analysis, Tests.

Banschikov, V. M. and Ambrumova, A. G.
THE INTERRELATION OF PSYCHOGENIC AND SOMATIC FACTORS IN THE PICTURE OF A PARANOID REACTION (O Vzaimodeistvii Psikhogennykh i Somatogennykh Faktorov v Kartinye Paranoidnoi Reaktsii) tr. by Eve Chinitz and R. S. Einsberger. [1961] [11]p.
Order from OTS or SLA $1.60 62-15341

Trans. of Zhurnal Nevropatologii i Psikhiatrii (USSR) [1959, v. 59] p. 1001-1004.

DESCRIPTORS: *Psychoses, *Psychosomatic medicine, Blood sugar, Hypoglycemia, *Reaction (Psychology), Insulin, Shock therapy.

BIOGRAPHIES OF SOVIET SCIENTIST. 6 Aug 62 [37]p. 65 refs. JPRS: 14734.
Order from OTS or SLA $3.60 62-32216

Trans. of 14 selected biographical articles from various Soviet sources.

DESCRIPTORS: *Scientific personnel, Agriculture, Anatomy, Biochemistry, Engineering, Geology, Geophysics, Medicine, Mineralogy, Physiology, X-rays, Zoology.

Contents:
A. B. Bekturov, N. V. Belov, S. M. Dionosov, V. A. Frantseson, V. G. Geptner, L. M. Gol'dshtein, A. G. Kalashnikov, V. S. Kulebakin, B. V. Pavlov, A. A. Rogov, L. M. Shabad, I. D. Strashun, N. N. Yakovlev, A. A. Yakzhin.

BIOLOGICAL SCIENCES

Sozonovich, N.
ORGANOLEPTIC ASSAY (DEGUSTATION) AS A METHOD FOR THE EVALUATION OF TOBACCO QUALITY. [1962] 18p.
Order from K-H $22.50 K-H 11092-d

Trans. of Duvan (Yugoslavia) 1960, v. 10, no. 12, p. 337-351.

DESCRIPTORS: *Tobacco, Taste.

PHYSIOLOGY JOURNAL, 1962, VOL. 8, NO. 1: [SELECTED] ARTICLES. 16 Aug 62 [36]p. 130 refs. JPRS: 14868
Order from OTS or SLA $3.60 62-32445

Trans. of Fiziologichnyi Zhurnal (USSR) 1962, v. 8, no. 1, p. 3-20 and 38-43.

DESCRIPTORS: Physiology, *Cells (Biology), Ecology, *Neuromuscular transmission, Neurology.

Contents:
Biographic information of Danilo Semenovich Vorontsov, by O. F. Makarchenko and others
On the interrelationships of living cells and the environment (a report to the Congress of the Ukrainian Society of Physiologists (no. 6) Odessa, 1961, by D. S. Vorontsov and O. O. Bogomolets
D. S. Vorontsov's phenomenon in one neuromotor unit, by S. I. Fudel'-Osipova.

PROBLEMS OF PSYCHOLOGY, 1962, VOL 8, NO. 2; [SELECTED] TRANSLATIONS. 20 Aug 62 [63]p. 67 refs. JPRS: 14901.
Order from OTS or SLA $6.60 62-32453

Trans. of #Voprosy Psikhologii (USSR) 1962, v. 8, no. 2, p. 19-40, 61-72, 92-100, 151-155.

DESCRIPTORS: *Physchology, *Mathematical logic, Information theory, *Education, *Learning, Reasoning, *Sociology, *Time, *Perception, Feedback, Motor reactions.

Contents:
Experience in application of mathematical logic and information theory to certain problems of teaching, by L. N. Landa
The problem of forming the initial physical concepts, by O. P. Terekhova
On the subject of social psychology, by A. V. Baranov
Time perception and the principle of feedback, by D. G. El'kin.

Buhlmann, A. A.
RESPIRATORY PHYSIOLOGY OF DIVING. [1962] [10]p.
Order from SLA $1.10 62-18001

Trans. of Schweizerische Medizinische Wochenschrift, 1961, v. 91, 1 July, p. 774-778.

DESCRIPTORS: *Respiration, Physiology, *Diving, Hypercapnia, *Lungs.

The increase of gaseous density under pressure raises viscous resistance in the respiratory passages. Thus effort of the respiratory muscles is accentuated.

Through too great respiratory effort the ventilation will be restrained. Hypoventilation leads to a retention of carbon-dioxide. The symptoms of the so-called rapture of the deep are, in fact, consequences of hypercapnia and of acidic respiration. The increase in partial pressure of oxygen favors the tendency to hypoventilation during diving with compressed air. The rapture of the deep may be avoided by easing the efforts of the respiratory muscles with artificial breathing aids or by replacing oxygen, which is heavy, with a gas of a lower specific gravity, helium or hydrogen. A specific narcotic action of nitrogen under pressure is denied. (Author)

Kassil, G. N.
THE HEMATO-ENCEPHALIC BARRIER IN SOME PHYSIOLOGICAL AND PATHOLOGICAL STATES OF THE C. N. S. [1962] [18]p. 22 refs.
Order from OTS or SLA $1.60 62-14724

Trans. of #Fiziologicheskii Zhurnal SSSR, 1961, v. 47 [no. 3] p. 301-309.

DESCRIPTORS: *Hemato-encephalic barrier, *Nervous system, Permeability, Injuries, *Blood, Body fluids, *Pathology, Physiology.

The hemato-encephalis barrier (heb) fulfills homeostatic (adaptive, regulatory) functions, directed towards the maintenance of stability within the central nervous system (CNS), especially towards safeguarding the equilibrium among the ever-changing needs of the elements within the brain and spinal cord. The heb is the only physiological mechanism which separates the blood stream from the CNS. However, its structure is not uniform throughout, nor are its protective and regulatory functions uniform throughout its extent. Data obtained by means of radio isotope indicators indicate that the permeability of the heb in different parts of the nervous system of the fluid systems in man or animal is not uniform. These differences in permeability appear to be quantitative than qualitative in character. Under certain pathological conditions of the organism the permeability of the heb in various parts of the brain is not affected uniformly, a phenomenon reflected in the inter-distribution (in comparison with normal conditions) of indicators in the nerve tissue. The presence of large quantities of chemo-, osmo- and baro-receptors in the (blood) vessels, in the membranes and parenchyma of the brain, as well as the close interaction between the condition of the heb on one hand, and the metabolism trophism and nourishment of the brain on the other, leads to the assumption that the functional condition and selective permeability of the barrier is regulated by the CNS through humoral as well as reflexive mechanisms. (Author)

Kuznetsov, M. I. and Udalov, Yu. F.
THE INFLUENCE OF HIGH EXTERNAL TEMPERATURE ON THE METABOLISM OF VITAMINS. [1962] [13]p. 11 refs.
Order from OTS or SLA $1.60 62-14714

Trans. of Voprosy Pitaniya (USSR) 1958 [v. 17] no. 1, p. 18-24.

DESCRIPTORS: Temperature, Climatic factors, *Metabolism, *Vitamins, Thiamine, Ascorbic acid, Vitamin B complex.

Experiments indicated that there occurs a disruption in the metabolism of vitamins C, B_1 and B_2 in the human as well as in the animal organism under conditions of extreme external high temperature, which indicates that under these conditions the vitamin C, B_1 and B_2 requirements increase.

Laborit, H., Moynier, R. and others.
INFLUENCE OF THE ION COMPOSITION OF THE EXTRACELLULAR MEDIUM AND COMPARATIVE INFLUENCE OF ASPARTIC ACID, OF POTASSIUM ASPARTATE AND OF GLUCOSE UPON THE SWIM TEST OF WHITE RATS. [1962] 7p. (1 table 4 refs. omitted).
Order from SLA $1.10 62-14605

Trans. of Soc[iété de] Biol[ogie et de ses Filiales]. Compt[es] Rend[us de Séances] (France) 1957, v. 151, no. 7, p. 1383-1386.

DESCRIPTORS: Body fluids, *Ion exchange, *Aspartic acid, Potassium compounds, *Glucose, Sodium compounds, *Fatigue (Physiology), Rats.

Laborit, H., Moynier, R. and others.
THE PLACE OF CERTAIN SALTS OF D, L-ASPARTIC ACID IN THE CONSERVATION OF THE REACTION ACTIVITY WITH RESPECT TO THE ENVIRONMENT. [1962] 12p. (1 fig. 11 refs. omitted) 1 ref.
Order from SLA $1.60 62-14606

Trans. of la Presse Medicale (France) 1958, v. 66, no. 57, p. 1307-1309.

DESCRIPTORS: Sodium, Potassium, *Salts, *Aspartic acid, Cells (Biology), *Fatigue (Physiology), Inhibition, Liver.

Letunov, S. P.
ALEKSANDR MIKHAILOVICH MARKOV (THE 60TH ANNIVERSARY OF THE DAY OF HIS BIRTH) [AND] THE CLINICAL ASPECTS OF SPORT MEDICINE IN THE USSR. 25 June 62 [16]p. JPRS: 14230.
Order from OTS or SLA $1.60 62-25475

Trans. of Klinicheskaya Meditsina (USSR) 1962, v. 40, no. 1, p. 3-14.
Another trans. of (p. 5-14) is available from OTS or SLA $2.60 in 62-24018, JPRS-13402, 10 Apr 62 [21]p.

DESCRIPTORS: Physiology, Pathology, *Physical fitness, Motor reactions, Nervous system, Heart, Measurement, Liver, Thyroid gland, Adrenal glands, Medical personnel.

Mogilevskii, A. Ya.
THE STATE OF CONTEMPORARY THINKING ON THE ROLE OF SEROTONIN IN THE FUNCTIONS OF THE CENTRAL NERVOUS SYSTEM. [1962] [24]p. [95 refs. omitted) 9 refs.
Order from OTS or SLA $2.60 62-14746

Trans. of #Uspekhi Sovr[emennoi] Biologii (USSR) 1960, v. 50 [no. 3(6)] p. 322-336.

DESCRIPTORS: Theory, *Serotonin, Physiology, *Nervous system, *Metabolism, Reserpine, Epinephrine.

Morozova, M. S. and Promyslov, M. Sh.
THE PROBLEM OF ENZYME-PRODUCED SPLITTING OF CEREBRAL CEREBROSIDES. [1962] [7]p. 3 refs.
Order from OTS or SLA $1.10 62-14720

Trans. of #Byull[eten'] Eksp[erimental'noi] Biol[ogii] i Med[itsiny] (USSR) 1960, v. 50 [no. 12] p. 44-47.

DESCRIPTORS: *Enzymes, *Brain, Lipids, Nervous system, *Carbohydrates, *Hexoses.

A review of the literature shows that the problem of whether d- or B- galactosidase splits galactose off the molecule of cerebrosides has not been definitely settled. The evidence available leads to the supposition that the enzymes, splitting the cerebrosides in the brain of animals, in all probability belong to the galactosidase type.

Nassonov, D. N. and Suzdalskaya, I. P.
ON CHANGES IN THE PROTOPLASM OF MYELINATED NERVE FIBERS ACCOMPANYING EXCITATION. [1962] [13]p. (2 figs. omitted) 42 refs.
Order from OTS or SLA $1.60 62-14734

Trans. of #Fiziol[ogicheskii] Zhurn[al] SSSR, 1957, v. 43, no. 7, p. 664-671.

DESCRIPTORS: *Cells (Biology), *Nerves, *Excitation, Colorimetry.

During the traveling of the impulses along the myelinated live nerve fiber, the colorability of its protoplasm to basic stains is increased. This increase in stain sorption with stimulation depends upon the frequency of impulses sent along the nerve fiber and reaches a maximum at 100 Hz. Evidence favors the assumption that the nature of changes occurring in the protoplasm of nerve fibers as a result of excitation, is related to the phenomenon of paranecrosis. (Author)

Policard, A., Collet, A. and others.
PULMONARY ALVEOLI IN THE ELECTRON MICROSCOPE (L'Alveole Pulmonaire au Microscope Électronique). [1962] [9]p. (10 figs. refs. omitted)
Order from SLA $1.10 62-18098

Trans. of la Presse Médical (France) 1954, v. 62, 25 Dec, p. 1775-1777.

DESCRIPTORS: *Lungs, Tissues (Biology), *Electron microscopy, Cells (Biology), Morphology, Histology.

Sheivekhman, B. Yu.
EFFECT OF THE ACTION OF AN ULTRAHIGH FREQUENCY FIELD ON THE AUDIO (AURAL) SENSITIVITY DURING APPLICATION OF ELECTRODES IN THE ZONE OF PROJECTION OF THE AURAL ZONE OF THE CORTEX (LAMELLA OF TEMPORAL BONE). 2 May 62 [12]p. 5 refs.
FTD-TT-62-491.
Order from OTS or SLA $1.60 62-25749

Unedited rough draft trans. of Problemy Fiziologicheskoi Akustiki (USSR) 1949, v. 1, p. 122-127.

DESCRIPTORS: *Hearing, *Auditory thresholds, *Sensitivity, *Ultrahigh frequency, Cerebral cortex.

On 36 test persons were carried out 278 experiments to study the effects of a UHF field of low intensity for a period of 5 minutes on the lamellar temporal bones in the zone of projection of Heschl's gyrus. After exposure a change was observed in aural thresholds; 17.4% at audio frequencies of 300 per/sec, 30% at 1000 per/sec, and 27.1% at 4000 per/sec. In all experiments changes in aural thresholds were observed in 26.6% of the cases. Change in aural sensitivity under the effect of the UHF field was observed after exposure within limits of ± 2 db at a frequency of 300 per/sec, from 4 to 6 db at a frequency of 1000 per/sec, and from 6 to 12 db at a frequency of 4000 per/sec. In some experiments the change in aural sensitivity was observed also in the opposite ear, but to a lesser extent. The time necessary for restoration of the threshold to normal values varies between 4 to 7 min for frequencies of 1000 per/sec, and 5 to 12 min for frequencies of 4000 per/sec. In individual experiments at a frequency of 4000 per/sec, an increase was noticed in threshold to 26 db after exposure, and the time necessary for restoration to normal, goes up to 120 minutes. An explanation is given of the localization of the UHF-field effect in the mentioned zone. (Author)

Shmidt, Z. N.
CHANGE IN PERMEABILITY OF THE HEMATO-ENCEPHALIC AND HEMATOOPHTHALMIC BARRIERS WITH LOWERED ATMOSPHERIC PRESSURE [Izmenenie Pronitsaemosti Gema-Entsefalicheskogo i Gemato-Oftal'micheskogo Bar'erov pri Ponizhenii Atmosfernogo Davleniya]. [1962] [6]p. 17 refs.
Order from OTS or SLA $1.10 62-14749

Trans. of Akademiya Nauk SSSR. Doklady, 1959, v. 126, no. 3, p. 696-698.
Another trans. is available from LC or SLA mi$1.80, ph$1.80 as 59-19055, 27 Aug 59, 7p.

DESCRIPTORS: *Permeability, Brain, *Eye, *Hemato-encephalic barrier, *Hemorrhage, Tissues (Biology), Inhibition, Atmosphere, Pressure.

In the present work 49 experiments with rats and 16 experiments with guinea pigs are presented. A disruption in the function of biological barriers with increased altitude was more significant in guinea pigs than in rats. Rapid decrease in atmospheric pressure leads to a weakening in the function of barrier adaptation in the brain and in the eye.

Bunyatyan, G. Kh.
NUEVOS DATOS SOBRE LA ACCION DEL ACIDO GAMMA AMINOBUTIRICO (Novye Dannye o Roli Gamma-aminomaslyanoi Kisloty) (New Data on Gamma-aminobutyric Acid). 9p. 14 refs. CID: 62-51. (text in Spanish).
Order from OTS or ETC $0.95 62-26251

Trans. of Akademiya Nauk SSSR. Doklady, 1960, n. 132, no. 6, p. 1431-1433.

DESCRIPTORS: *Amino acids.

Dessi, P. and Murari, G.
RESEARCHES ON THE DRUG-PROTEIN BOND. X. BEHAVIOR OF THE NITROFURANS. [1962] 4p. 5 refs.
Order from SLA $1.10 62-18060

Trans. of Società Italiana di Biologia [Sperimentale]. Bollettino, 1961, v. 37, no. 16, p. 761-762.

DESCRIPTORS: Drugs, *Proteins, *Molecular association, *Nitrogen compounds, *Furan derivatives.

Mestechkina, A. Ya.
SOME CHEMICAL CHANGES IN THE BRAIN UNDER THE EFFECT OF TUMORS. [1962] [18]p. 15 refs.
Order from OTS or SLA $1.60 62-14762

Trans. of Ukr[ayins'kyi] Biokh[imichnyi] Zhurn[al] (USSR) 1960, v. 32, no. 3, p. 381-391.

DESCRIPTORS: *Brain, Chemical analysis, *Tumors, Water, Nitrogen, Phosphorus, *Cerebrospinal fluid.

In the white matter of the human brain located close to a tumor the water content increases as observed in macroscopic experiments with oedema and swelling. At the same time the content of total nitrogen and phosphorus, the precipitate nitrogen and the acid-sol. phosphorus content of total nitrogen and phosphorus, the precipitate nitrogen and the acid-sol. phosphorus content, computed on the dry matter, increases. With the method of centrifugion we were able to separate a fluid from the white matter located close to the tumor in the case of a certain increase in water content. We called it the intracellular or oedemic liquid. The oedemic liquid averaged 4% of total protein whereby the globulin content exceeded that of the albumins. The content of total nitrogen was 881 mg%, precipitate nitrogen 165 mg%, chlorine 267 mg%, sugar 63 mg%, cholesterine, 67 mg%, Potassium, 214 mg%, calcium 14.2 mg%, total phosphorus 315 mg%, acid-sol. 30 mg%. On the basis of a comparison of the results obtained on studying the oedemic liquid with the data obtained on studying the contents of certain substances in the white matter of the cerebral hemisphere affected by tumor, as well as with the blood composition (data from literature, it may be presumed that the oedemic liquid is formed from blood serum as a result of a rise in the permeability of the vessels as well as from the influx of certain substances from the brain tissue. (Author)

Moretti, Jean; Boussier, Genevieve, and Jayle, M. F.
REPRODUCTION OF TECHNIC AND FIRST APPLICATIONS OF STARCH (GEL ELECTROPHORESIS) (Réalisation Technique et Prèmieres Applications de l'Électrophorese sur Gel d'Amidon). [1962] [15]p. (4 figs. refs. omitted).
Order from SLA $1.60 62-18100

Trans. of Societe de Chimie Biologique. Bulletin (France) 1957, v. 39, p. 593-605.

DESCRIPTORS: *Gels, *Starches, *Electrophoresis, *Proteins, Analysis.

Ochoa, Severo.
THE ENZYMATIC SYNTHESIS OF RIBONUCLEIC ACID (RNA). [1962] [16]p. 38 refs.
Order from SLA $1.60 62-16901

Trans. of Angewandte Chemie (West Germany) 1960, v. 72, p. 225-231.

DESCRIPTORS: *Enzymes, *Synthesis, *Nucleic acids, Genetics, Viruses, Nucleotides, Nucleoproteins.

Promyslov, M. Sh. and Morozova, M. S.
ON THE RELATIONSHIP BETWEEN THE CONTENT OF SULFHYDRYL GROUPS AND CEREBROCIDE METABOLISM IN THE BRAIN OF RABBITS. [1962] [3]p. 6 refs.
Order from OTS or SLA $1.10 62-14740

Trans. of #Byull[eten'] Eksp[erimental'noi] Biol[ogii i] Med[itsiny] (USSR) 1959, v. 48, no. 11, p. 59-61.

DESCRIPTORS: *Thiols, *Brain, *Metabolism, Enzymes, Convulsions, Toxicity.

Savinov, B. G. and Protesenko, L. D.
CHROMATOGRAPHIC INVESTIGATION OF CAROTIN PIGMENTS OF SQUASH, MOUNTAIN ASH, AND SEA BUCKTHORN. [1962] 18p.
Order from K-H $22.50 K-H 5027-b

Trans. of Ukrainskii Khim[icheskii] Zhurnal (USSR) 1954, v. 20, no. 4, p. 399-407.

DESCRIPTORS: *Chromatographic, Pigments, Analysis, *Carotene, *Plants, Ash, Carotenoids.

Skvirskaya, E. B. and Babii, T. P.
COMPARATIVE DATA ON THE NUCLEIC ACID COMPOSITION IN THE NERVOUS SYSTEM OF COWS [1962] [9]p. 19 refs.
Order from OTS or SLA $1.10 62-14763

Trans. of Ukr[ayins'kyi] Biokh[imichnyi] Zhurn[al] (USSR) 1959, [v. 31] no. 6, p. 859-867.

DESCRIPTORS: *Nucleic acids, *Nervous system, Cattle, *Brain, Nerves, Paper chromatography, Ultraviolet spectroscopy.

The method of quantitative paper chromatography in conjunction with ultraviolet spectrophotometry was applied to a study of the nucleic acid composition in nervous system tissues. RNA, derived from the brain and peripheral nerve tissues of cows is typified by different composition (different molar ratios of the various nitrogenous components and a different coefficient of specificity). The tissue and nuclear RNA's of the cerebral cortex and cerebellum were also different. No differences were found in the DNA compositions of various parts and structures of the nervous system in this species of animals.

Terawaki, Asaharu, Taguchi, Tetsuo, and Shiba, Shigeru.
STUDY ON THE MODE OF ACTION OF MITOMYCIN C. [1961] 3p.
Order from SLA $1.10 61-10426

Trans. of Gann (Japan) 1959, v. 49 [Mar] suppl, p. 112-113.

DESCRIPTORS: *Antibiotics, *Cancer, Growth, Inhibition, Biosynthesis, Nucleic acids.

Trufanov, A. V.
PHYSIOLOGICAL EFFECT OF FOLIC ACID AND ITS METABOLISM IN THE ANIMAL ORGANISM IN VARIOUS DIETS. [1962] 28p. 82 refs. [NIH] no. 274.
Order from OTS or SLA $2.60 62-23532

Trans. of Voprosy Pitaniya (USSR) 1957, v. 16 [no. 2] p. 6-17.

DESCRIPTORS: *Folic acid, *Metabolism, Biosynthesis, *Diet, *Coenzymes, Glycines, Serine, Purines, Pyrimidines, Methylation, Ascorbic acid.

Vladimirov, G. E., Ivanova, T. N., and Pravdina, N. I.
CONCERNING CERTAIN PROPERTIES AND THE RATE OF RENOVATION OF THE LIPOPROTEIN COMPONENTS IN BRAIN TISSUES. [1962] [14]p. 9 refs.
Order from OTS or SLA $1.60 62-14725

Trans. of mono. [Voprosy Biokhimii Nervnoi Sistemy] (Problems in the Biochemistry of the Nervous System) [ed. by] A. V. Palladin, Kiev, 1957, p. 61-68.
Another trans. is available from LC or SLA mi$1.80, ph$1.80 as 60-18380 [1960] [9]p.

DESCRIPTORS: Biochemistry, *Brain, *Phospholipids *Liptoproteins, *Metabolism, Paper chromatography, Physiology.

A phosphorus fraction of a lipoprotein nature was isolated from the brain tissue of rabbits and white rats. This fraction constitutes 16 to 19% of the lipoprotein: its renovation rate was 24%. This rate was determined from the relative specific activity (RSA) over a 3-hour period, where RSA = 100(specific activity of P fraction/specific activity of inorganic P of the brain). The phosphorus fraction consisted of 2 groups. One group is soluble in chloroform and contains inosite. The RSA for this group was 14%. The other group, which is soluble in aqueous methanol and does not contain inosite, had an RSA of 41%. In the different parts of the brain an uneven quantity of this lipoprotein phosphorus is found with different renovation rates. The minimum (up to 15 mg%) was observed in the gray matter of the large hemispheres, and the maximum (up to 38 mg%) in the spinal column. A change in the functional state of the central nervous system was followed by a change in the renovation rate of the different fractions of the lipoprotein phosphorus. Stimulation increased the RSA. In hypothermia a sharp decrease in the renovation rate of the lipoprotein phosphorus was observed.

Vladimirov, G. E.
EFFECT OF HYPOTHERMIA IN COMBINATION WITH CESSATION OF BLOOD CIRCULATION ON BRAIN METABOLISM. [1962] [19]p. 29 refs.
Order from OTS or SLA $1.60 62-14772

Trans. of mono. [Voprosy Biokhimii Nervnoi Sistemy] (Problems in the Biochemistry of the Nervous System) ed. by A. V. Palladin, Kiev, 1957, chap. 22, p. 247-257.

DESCRIPTORS: *Hypothermia, *Blood circulation, *Brain, Pathology, *Metabolism, Physiology, Phospholipids, Liploproteins, Amino acids, Glucose, Glycogen.

Research is summarized and tabulated on the effect on brain metabolism of hypothermia and hypothermia with cessation of blood circulation. Various methods were used for inducing hypothermia and cessation of blood flow to the brains of laboratory animals. Control studies were made at normal body temperatures. The brains were subjected to extensive analysis by extracting proteins, lipoproteins, phosphoproteins, glycogen, glucose, lactic acid, amino acids and numerous fractions of these and other substances Results indicate that: (1) hypothermia affects the plastic lipoid and protein metabolism to a much greater extent than could have been predicted from the temperature factor established by Van-Hoff for chemical reactions, (2) at 20°C the plastic metabolism is very weak, while the energy metabolism remains fairly pronounced, and (3) functional activity of the nerve cells is suspended as a result of sharp inhibition of those biochemical processes which are directly connected with the metabolism of protein and lipoid substances.

Zbarskii, I. B. and Karuzina, N. P.
THE EFFECT OF RIBONUCLEIC ACID AND ITS HYDROLYZATES OF THE INCORPORATION OF GLYCINE-1-C^{14} INTO THE PROTEINS OF NORMAL AND TUMOR TISSUES. [1962] [6]p. 10 refs.
Order from OTS or SLA $1.10 62-14741

Trans of #Byull[eten'] Eksp[erimental'noi]Biol[ogii i] Med[itsiny] (USSR) 1959, v. 48, no. 11, p. 65-69.

DESCRIPTORS: *Nucleic acids, Glycines, Hydrolysis, Proteins, *Tumors, *Tissues (Biology), Labeled substances.

Botany

Dobrynin, G. M.
METHODOLOGY OF THE STUDY OF THE BIOLOGY OF PLANT ROOTS (K Metodike Izucheniya Biologii Kornei Rastenii). [1962] [9]p.
Order from OTS or SLA $1.10 62-10744
Original figs. of poor quality; available on loan also

Trans. of Botanicheskii Zhurnal (USSR) 1955, v. 40, no. 5, p. 696-702.

DESCRIPTORS: Biology, *Plants, *Hydrogen compounds, *Peroxides.

The use of a weak aqueous hydrogen peroxide solution (about 3 - 4%) in washing the plant roots is proposed. When after the washing of the roots the plants are planted out in soil, they continue to grow and develop. This will probably make it possible to continue to grow the plants after inspection of their root system.

Giovannozzi, M.
ON THE TEMPERATURES OF THE BULKS (MASSES) FOR TUSCAN CIGARS AND MICROBIAL DEVELOPMENTS, AND NEW COMPARISONS BETWEEN CULTURE MEDIA FOR THE COUNTING. Rept. 11 of Studies on the Fermentation of Tobaccos. [1962] [20]p. 7 refs.
Order from SLA $1.60 62-18004

Trans. of il Tabacco (Italy) 1948, v. 52, no. 582, p. 3-15.
Another trans. is available from K-H $23.75 as K-H-11517-a [1962] 19p.

DESCRIPTORS: *Tobacco, Chemical properties, *Fermentation, Processing Culture media, Temperature, Microorganisms, Growth.

In the masses of fermenting Kentucky tobacco for Tuscan cigars, even when in some parts of them and especially at the center of the masses, the temperaperatures exceed 50°C and sometimes rise higher than 60°, very high percentages of the same masses are subject in the meantime to temperatures varying between 40 and 50° or less, and at these temperatures the microbial developments find conditions more or less favorable for their manifestation. In the points of the masses where the temperatures reach 60°C one does not find a state of sterility of the tobacco, but the microbial content is greatly reduced (between 1/50 and 1/100) in comparison with that found on the average, in the zones with temperatures of about 40°. (Author)

Kobata, Jiro and Akinaga, Y.
ESTIMATION OF THE APPARENT DENSITY OF CUT LEAF. Pt. 1 of Studies on the Apparent [Volume] of Tobacco Leaves. [1962] 11p.
Order from K-H $13.75 K-H 5919-b
Trans. of [Nihon Senbai Kosha Chuo Kenkyusho Kenkyu Hokoku] (Japan) 1956, no. 96, p. 25-29.

DESCRIPTORS: *Tobacco, *Plants, Density.

Kobata, Jiro and Akinaga, Y.
PHYSICAL PROPERTIES OF JAPANESE TOBACCO LEAVES. Pt. 2 of Studies on the Apparent Volume of Tobacco Leaves. [1962] 9p.
Order from K-H $11.25 K-H 5919-c

Trans. of [Nihon Senbai Kosha Chuo Kenkyusho Kenkyu Hokoku] (Japan) 1956, no. 96, p. 30-33.

DESCRIPTORS: *Tobacco, *Plants, Physical properties.

(See also K-H-5919-b)

Kobata, Jiro, Akinaga, Y. and others.
RELATION BETWEEN PHYSICAL AND CHEMICAL PROPERTIES AND STALK POSITION OF BRIGHT YELLOW LEAVES. Pt. 3 of Studies on the Apparent Volume of Tobacco Leaves. [1962] 17p.
Order from K-H $21.25 K-H 5919-d

Trans. of [Nihon Senbai Kosha Chuo Kenkyusho Kenkyu Hokoku] (Japan) 1956, no. 96, p. 34-38.

DESCRIPTORS: *Tobacco, *Plants, Physical properties, Chemical properties.

(See also K-H 5919-c)

Medical Specialties and Equipment

PHYSICIANS' AFFAIRS, 1961, NO. 12: [SELECTED] TRANSLATIONS. 28 June 62 [39]p. JPRS: 14308.
Order from OTS or SLA $3.60 62-25534

Trans. of Vrachebnoe Delo (USSR) 1961, no. 12, p. 3-11 and 126-132.

DESCRIPTORS: Medical personnel, Hospitals, *Public health, Conferences, *Radioactivity, *Luminescent pigments, *Neuropsychiatry, Medical supplies, Time, Recording devices.

Contents:
On the condition and tasks of health in the Ukrainian SSR in the light of the decisions of the Congress of the CPSU (no. 22) by P. L. Shupik
The problem of the hygienic requirements in working with radioactive luminescent dyes which are constantly active, by N. A. Khboinitskaya and B. P. Pugachevskii
Psychoneurologic aid in the Ternopol'skaya oblast, by V. V. Lastovetskii
A disc-scale for statistical calendar computations, by R. B. Akhmedzyanov.

Borneff, Joachim.
THE MEDICAL SIGNIFICANCE OF HEAT RADIATION IN GLASS AND IRON PLANTS. 30 Nov 60 [19]p. 20 refs.
Order from SLA $1.60 62-14220

Trans. of Glastechn[ische] Ber[ichte] (West Germany) 1960, v. 33, no. 8, p. 296-303

DESCRIPTORS: *Thermal radiation, Foundries, Refineries, *Iron, *Glass, *Industrial medicine.

In steel and glass plants, the heat radiation and the micro atmospheric conditions were determined at the work areas. Blast furnace smelters and ingot shear workers were more exposed to rays than hollow and rod glass makers; these in turn are exposed more strongly than those who work in the open under the action of the sun. Clinical findings showed that working in heat for many years produced in many cases (up to 50%) chronic inflammatory mucous membrane changes of the upper respiratory passages, whereby particularly the nose, its sinuses, and the larnyx are involved. In all probability infrared radiation (760-1400 mμ) represents the cause of these changes, while a lesser causal importance is attributed to dust and the high room air temperature. The workers were studied opththalmologically for injuries to the lens of the eyes. Occupational cataracts were found only in the case of workers in the glass plant. The studies led to the conclusion that the radiation cataract represents a developmental disorder of the lens fibers. It goes back to a damaging of the germinative zone at the lens equator and is started by electromagnetic radiations with a depth effect. The results of the study indicate the desirability of a more extensive use of technical devices in order to decrease radiation energy and to improve the micro atmospheric conditions. (Author)

Kobrinskii, A.
BIOELECTRIC CONTROL SYSTEMS. 6 Mar 62 [11]p. FTD-TT-62-36, AD-276 927.
Order from OTS or SLA $1.60 62-24272

Unedited rough draft trans. of Radio [Moscow] (USSR) 1960, no. 11, p. 37-39.

DESCRIPTORS: *Bioelectronics, Biophysics, *Prosthetics, Electrical equipment, *Medical equipment, Control systems, Medical research, Reflexes, Muscles, Brain, Human engineering, Arms.

Although the work on the border line of the exact and natural sciences is still unfolding, even today a number of encouraging practical attainments can be noted in this area. The prosthesis of the arm with bioelectric control, created by a group of Soviet scientists and which received high recognition in our country as well as abroad, should be added to this number. The working of prosthesis with bioelectric control is based upon the fact that a signal-command about some action, which is sent by a nerve fiber to a kinetic muscle, is accompanied by weak electrical signals. These signals may be recorded along the entire path from the brain to the muscle. They are biocurrents, drawn from kinetic muscles and used to control prosthetic mechanisms. (Author)

Nel'son, I. A. and Stolyarov, L. I.
APPARATUS FOR GROUP ELECTROAEROSOL THERAPY AND PROPHYLAXIS. 17 Apr 62 [16]p. 2 refs. JPRS: 13498.
Order from OTS or SLA $1.60 62-23998

Trans. of Meditsinskaya Promyshlennost' SSSR, 1962 [v. 16] no. 4, p. 52-57.

DESCRIPTORS: *Medical equipment, *Aerosols, *Inhalation immunization, *Therapy, Electrostatic generators, Atomization, Particles, Industrial medicine.

Obrosov, A. N., Orlov, G. A., and Tyukina, A. P.
ON THE STATUS AND PROBLEMS OF THE DEVELOPMENT OF SCIENTIFIC RESEARCH ON PHYSIOTHERAPY IN THE PUBLIC HEALTH ESTABLISHMENTS OF THE RSFSR [AND] THE IMPORTANT QUESTION OF THE PROBLEM OF ACCLIMATIZATION OF MAN IN THE NORTH. 27 June 62 [14]p. JPRS: 14294.
Order from OTS or SLA $1.60 62-25526

Trans. of Byulleten' Uchenogo Meditsinskogo Soveta (USSR) 1961, v. 2, no. 5, p. 16-24.

DESCRIPTORS: *Public Health, Physiology, *Therapy, Health resorts, Water, Pathology, Climatic factors, Humidity, Temperature, Blood vessels, Nervous system, Exposure.

Zdankevich, V. L.
THE USE OF ELECTRONICS AND COMPUTER ENGINEERING IN MEDICINE. 7 June 62 [12]p. 3 refs. JPRS: 14053.
Order from OTS or SLA $1.60 62-25193

Trans. of mono. Elektronnye Mashiny Sluzhat Cheloveku (Electronic Machines Serve Man) Riga, 1961, p. 157-171.

DESCRIPTORS: *Electronics, *Computers, *Engineering, *Medicine, *Medical equipment, Diagnosis, X-ray photography, Prosthetics, Minature electronic equipment, Electrosleep.

Microbiology

Gierer, Alfred and Mundry, Wolfgang.
PROCESS FOR THE PRODUCTION OF VIRUS MUTANTS. [1962] [6]p.
Order from OTS or SLA $1.10 62-14808

Trans. of German patent 1,081,606, cl. 30h 6, internat. cl. A61k, by Behringwerke Aktiengesellschaft, appl. 30 Aug 58, pub. of appl. and granting of pat. 12 May 60, pub. of pat. spec. 17 Nov 60.

DESCRIPTORS: *Viruses, Genetics, *Mutations, Nitric acid, Nucleic acids.

The process is characterized in that viruses or their isolated nucleic acids are subjected to the action of nitric acid as mutagenous substance until partial inactivation occurs. The non-reacted nitric acid is removed after treatment of the viruses or their nucleic acid. Nitric acid is liberated in the virus solution by means of dilute weak acid from alkalinitrites, or produced by the introduction of nitrogen oxides. The resulting mutants can be again exposed to the mutagenous effect of nitric acid.

Giovannozzi-Sermanni, Giovanni.
A NEW SPECIES OF CORYNEBACTERIUM CAUSING THE DEGRADATION OF NICOTINE. [1962] [21]p. (16 figs. omitted) 27 refs.
Order from SLA $2.60 62-18005

Trans. of il Tabacco (Italy) 1957, v. 61, no. 682, p. 26-48.
Another trans. is available from K-H $25.00 as K-H-11558-a [1962] 20p.

DESCRIPTORS: *Bacteria, Identification, Classification, Nicotine, *Tobacco, Deterioration, Culture media.

The results are discussed of a morphologic, cultural and biochemical study carried out on a microorganism capable of degrading nicotine. The microorganism is referred to the genus Corynebacterium. (Author)

Koch, Gebhard.
ON THE DISPARATE INFECTIVITY OF ISOLATED RIBONUCLEIC ACID AND COMPLETE POLIOVIRUS IN TISSUE CULTURES (Zur Unterscheidlichen Infektiosität von Isolierter Ribonucleinsäure und Intaktem Poliovirus in der Gewebekultur). [1962] 17p. 14 refs.
Order from SLA $1.60 62-16286

Trans. of Z[eitschrift für] Naturforsch[ung] (West Germany) 1960, v. 15b, no. 10, p. 656-661.

DESCRIPTORS: *Nucleic acids, *Poliomyelitis virus, Culture media, Tissue culture, Tissues (Biology), *Genetics.

Litvinov, M. A.
NUEVO FUNGICIDA PARA LA LUCHA CONTRA EL MOHO (Novaya Fungitsidnaya Smes'dlya Bor'by s Plesen'yu) (New Anti-mold Fungicide). 5p. CID: 62-99 (text in Spanish).
Order from OTS or ETC $0.80 62-26299

Trans. of Akademiya Nauk SSSR. Vestnik, 1955, v.25 no. 2, p. 51-52.

DESCRIPTORS: *Fungicides, Molds.

Takahashi, Y. and Yamamoto, K.
THE CONSTITUANTS OF THE TUBERCULAR BACILLUS CAUSING ALLERGY AND IMMUNITY IN TUBERCULOSIS (Constituants du Bacille Tuberculeus Déterminant l'Allergie et l'Immunité dans la Tuberculose). [1962] 4p.
Order from SLA $1.10 62-14675

Trans. of Soc[iété de] Biol[ogie et de ses Filiales]. C[omptes] R[endus des Séances] 1961, v. 154, Feb, p. 1694-1697.

DESCRIPTORS: *Tubercle bacilli, *Immunization, *Allergy, Proteins, Lipids, Inflammation, Tuberculin

Experiment showed that in order for the chemical constituents of the tubercuar bacillus to be capable of manifesting their immunological activity in vivo, it is not always necessary that they be chemically bound to lipids to form complex substances called cymplex. Once the lipids are chemically united to the bacillary proteins and polyosides, they would form substances with large molecules; these would provoke a certain inflammatory reaction in situ thus intensifying indirectly the immunological activity of the proteins and polyesides to which they were united. Any inflammatory reaction in situ would be one of its direct, required conditions. (Author)

Neurology and Psychiatry

Deniker, Pierre.
HIBERNATION THERAPIES AND NEUROLEPTIC MEDICINES IN PSYCHIATRIC THERAPEUTICS: INTRODUCTION, HISTORY AND GENERAL CONCEPTS, AND CONCLUSIONS. Rept. for the International Congress of Psychiatry (no. 2) Zurich, 1-7 Sep 57. [1962] 20p.
Order from SLA $1.60 62-10715

Partial trans. of Encéphale (France) 1957, v. 46, no. 3, p. 281-398.

DESCRIPTORS: *Psychotherapy, Drugs, *Artificial hibernation, *Chemotherapeutic agents, *Psychoses.

Rusinov, V. S., ed.
EXPERIMENTAL STUDIES OF HIGHER NERVOUS ACTIVITY IN MAN AND ANIMALS (Eksperimental'nye Issledovaniya Vysshei Nervnoi Deyatel'nosti Cheloveka i Zhivotnykh) tr. by M. Artman and M. Roublev. 1962, 268p. 395 refs. PL-480 HEW.
Order from OTS $2.75 61-31019

Trans. of Akademiya Nauk SSSR. Institut Vysshei Nervnoi Deyatel'nosti, Trudy: Seriya Fiziologicheskaya, 1958, v. 4 [272]p.

DESCRIPTORS: *Neurology, *Physiology, *Cerebral cortex, Man, Animals, *Visual perception, *Conditioned reflex, *Auditory perception, *Motor reactions, *Analyzers (Psychology), Digestive system, *Reaction time, *Autonomic nervous system, Pathology, *Brain, *Nervous system, *Bioelectronics,

*Nerves, Electroencephalography, Drugs, *Chlorpromazine, *Blood sugar, Blood chemistry, *Psychoneuroses, *Electroshock, Benzedrine sulphate, *Convulsions, Epilepsy, *X-rays, *Ionization, Proteins, Metabolism, *Gamma rays, Pregnancy, *Genetics, *Pressure, Electric potential.

Contents:

Changes in acuity of visual discrimination during interaction of a sequence of conditioned reactions successively elaborated in an adult man: 1, Significance of elaboration of a sequence of similar motor reactions in visual discrimination of conditioned stimuli; 2, Characteristics of differentiation of a stimulus in the presence of one or three positive conditioned reactions; 3, Effect of verbalization of complex stimuli on acuity of their perception, by V. G. Samsonova
The effect of the strength of a conditioned auditory stimulus on the speed of conditioned reactions in man, by M. A. Alekseev
Data on the physiological characterization of the kinesthetic analysor in the cerebral cortex of a dog, by G. V. Skipin
The role of inhibitory conditioned connections in the formation of new types of motor activity, by E. I. Plonskaya
Conditioned-conditioned alimentary motor reflexes in dogs, by E. I. Plonskaya
Time as a component of a conditioned stimulus, by G. I. Shirkova
Differentiation of duration of action of a conditioned stimulus, by G. I. Shirkova
Contribution to the question of the mechanism of formation of a temporary connection during the formation of a conditioned defense motor reflex. 1. Appearance of centers of stagnant excitation during elaboration of conditioned motor defense reflexes, by R. L. Vinnik
Effect of stimulation of the superior cervical sympathetic ganglia on conditioned reflexes in dogs, by N. G. Ivanova
Disorders in and recovery of higher nervous activity in the presence of a center of mechanical action in the cerebral cortex, by M. A. Ryabinina
Changes in electrical potential along a nerve on localized formation of altered focus by pressure application. Preliminary Report, by T. B. Shvets
The bioelectric potentials of the cerebral cortex of a rabbit, recorded by direct current amplifier, by T. B. Shvets
The effect of chlorpromazine on the functional cerebral cortical state of a rabbit, by A. M. Ryabinovskaya
Dynamics of blood sugar levels in various functional states of higher parts of the central nervous system, Report 3, by M. G. Airapetyants
Blood picture during experimental neurosis in dogs, by T. N. Ryantseva
The effect of phenamine on electroconvulsive seizures, rept. 1, by K. I. Pogodaev
The physiological mechanism of epileptiform electroconvulsive seizures, by K. I. Pogodaev and others
The effect of anticonvulsant and convulsant drugs on the course and "threshold" of epileptiform seizures, by K. I. Pogodaev
The effect of small x-ray doses on alimentary conditioned reflexes in dogs, by M. G. Airapetyants
The effect of ionizing radiation on protein metabolism in the brain, by K. I. Pogodaev and others
Comparative studies on histopathological alterations in the central nervous system of white rats subjected to total and local gamma-ray irradiation, by M. M. Aleksandrovskaya
The effect of irradiation of pregnant white rats on postnatal development of their progeny expressed in morphological changes in the central nervous system, by N. I. Artyukhina
Slow changes in potential in the cerebral cortex of a rabbit under the effect of pressure exerted on the motor cortical region, by T. B. Shvets
The morphophysiological investigation of development of conditioned alimentary reaction in rabbits during ontogenesis, by A. M. Ivanitskii
Contribution to the question of the effect of chlorpromazine on higher nervous activity in animals (dogs), Report 2, by L. N. Khruleva

Pathology

QUESTIONS OF ONCOLOGY. PT. I. THEORETICAL ONCOLOGY (Voprosy Onkologii) tr. by Zelda Knowles. 1953 [375]p.
Order from OTS or SLA $21.00 62-24588-1

Trans. of mono. Trudy Vsesoyuznoi Onkologicheskoi Konferentsii (All-Union Oncological Conference) (no. 2) [held at] Leningrad, Jan 47, Moscow, 1950, p. 1-184.

DESCRIPTORS: *Tumors, *Cancer, Sarcoma, *Neoplasms, Etiology, *Viruses, *Genetics, *Proteins, *Mammary glands, Milk, *Hydrocarbons, Tissues, (Biology), *Immunization, *X-rays, Histology, *Embryology, Pneumonia, *Lungs.

Contents:

Etiology and Pathogenesis of Malignant Tumors, by N. N. Petrov
On the virus theory of the origin of cancer, by L. A. Zil'ber
Proteins and malignant tumors, by B. I. Zbarskii
Endogenous blastomogenic substances and the "milk factor", by L. M. Shabad
On a factor of malignancy separable from the tumor cell (contribution to the question of the virus origin of cancer), by I. M. Neiman
On the fate of cancerogenic hydrocarbons in the organism, by L. F. Larionov
Tests of the functional state of the physiological system of the connective tissue and their importance in oncology, by R. E. Kavetskii and others
Change of the active mesenchyma with malignant neoplasms, by B. N. Mogil'nitskii
Specific and nonspecific intracutaneous immunization against tumor, by V. D. Vinogradova
Effect of roentgen rays on explantates of human tumors, by A. D. Timofeevskii and A. A. Gorodetskii
Practical and theoretical importance of histogenetic analysis of tumors, by M. F. Glazunov
On multiplicity of anlagen of cancer of the lactic gland, by L. M. Shabad and Z. V. Gol'bert
Chronic nonspecific pneumonia and bronchial cancer, by S. S. Vail'
Discussions
Final words
Resume of presiding officer

QUESTIONS OF ONCOLOGY. PT. II: CANCER OF THE ESOPHAGUS AND STOMACH (Voprosy Onkologii) tr. by Zelda Knowles. 1953 [259]p.
Order from OTS or SLA $16.50 62-24588-2

Trans. of mono. Trudy Vsesoyuznoi Onkologicheskoi Konferentsii (All-Union Oncological Conference) (no. 2) [held at] Leningrad, Jan 47, Moscow, 1950, p. 187-304.

DESCRIPTORS: *Cancer, *Tumors, *Neoplasms, *Esophagus, *Stomach, Peptic ulcers, *Diagnosis, *X-rays, Thorax, Cells (Biology), *Surgery, *Lymphatic system, Abdomen, Peritoneum, Omentum, *Excision.

Contents:
Cancer of the stomach and ulcerous processes, by G. E. Koritskii
Precancerous diseases of the stomach, their diagnosis, prophylaxis, and treatment, by A. V. Mel'nikov and N. S. Timofeev
Early diagnosis of cancer of the stomach, by A. I. Savitskii
Roentgenological investigation in cancer of the stomach, by S. A. Reinberg
Resection of the chest division of the esophagus in cancer, by V. I. Kazanskii
Cancer of the cardia, by A. G. Savinykh
Spreading of cells of a cancerous tumor to the esophagus in cancer of the cardia, by E. M. Masyukova'
Directions and mergings of streams of lymph in the system of lymph nodes of the abdominal and chest cavity, by D. A. Zhadanov
On the ligament apparatus of stomach and abdominal division of the esophagus in the light of surgery, by K. P. Sapozhkov
Intrapleural resections of the esophagus and cardia in cancer, by B. V. Petrovskii
Discussions
Resume of presiding officer
(See also 62-24588-1)

QUESTIONS OF ONCOLOGY. PT. III: CANCER OF THE CERVIX (Voprosy Onkology) tr. by Zelda Knowles. 1954 [266]p.
Order from OTS or SLA $17.00 62-24588-3

Trans. of mono. Trudy Vsesoyuznoi Onkologicheskoi Konferentsii (All-Union Oncological Conference) (no. 2) [held at] Leningrad, Jan 47, Moscow, 1950, p. 305-422.

DESCRIPTORS: *Cancer, *Uterus, Tumors, Neoplasms, *Diagnosis, *X-rays, *Radium, Healing, *Surgery, *Reticulo-endothelial system, Therapy, *Lymphatic system, Abdomen, Histology, *Metabolism, *Thorium.

Contents:
Prophylaxis of cancer of the cervix, by V. E. Tsymbal
Early diagnosis of cancer of the uterus, by O. E. Nudol'skaya
Ray therapy of cancer of the cervix, by M. P. Domshlak
Remote results of the treatment of cancer of the uterus with radiant energy, by A. N. Lebedeva
Immediate and remote results of 800 wertheim operations, by V. P. Mikhailov and A. A. Terekhova
Enlarged abdominal operation in neglected forms of cancer of the cervix, by M. S. Aleksandrov and B. V. Nifontov
Clinic and treatment of cancer of the cervix in the light of the teaching of the physiological system of the connective tissue, by A. Yu. Lur'e
Microscopic investigation of native preparations isolated from diseases of the cervix in diagnosis of cancer, by A. Ya. Al'thauzen
New methods in the study of metabolism in cancers of the uterus, by D. E. Shmundak
Use of radium and of radium-mesothorium for treatment of cancer of the cervix, by D. B. Astrakhan
Discussions
Final words
Resume of Presiding Officer
(See also 62-24588-2)

QUESTIONS OF ONCOLOGY. PT. IV: MISCELLANEOUS MALIGNANT TUMORS (Voprosy Onkologii) tr. by Zelda Knowles. 1954 [208]p.
Order from OTS or SLA $14.00 62-24588-4

Trans. of mono. Trudy Vsesoyuznoi Onkologicheskoi Konferentsii (All-Union Oncological Conference) (no. 2) [held at] Leningrad, Jan 47, Moscow, 1960, p. 423-522.

DESCRIPTORS: *Cancer, *Tumors, *Neoplasms, *Intestine, *Surgery, Digestive system, Sensitivity, Amputation, Excision, *Radio activity, *Sarcoma, Radium, Therapy, *Mouth, *Thyroid gland, *Ultraviolet radiation, Blood, *Mitosis, Inhibition, *Polarographic analysis, Diagnosis.

Contents:
Operative treatment of cancer of the rectum, by S. A. Kholdin
Technique of one-minute combined radical operations in cancer of the rectum without anus iliacus, by P. I. Yurzhenko
Modification of the amputation of the rectum in cancer with preservation of the sphincter, by L. M. Nisnevich
Palliative operations in cancer of the gastro-intestinal tract, by A. D. Ochkin
Radio-sensitive embryocytomas and their treatment, by M. I. Nemenov
Operative treatment of nevogenic tumors, by A. P. Shanin
Use limitations of curie therapy and of surgical excision of the primary focus in cancer of the lower lip, by L. D. Vasilenko
Cancer of the thyroid gland, by F. M. Lyampert
New series of data on the question of ultra-violet radiation of the blood, by A. P. Pototskaya and V. I. Yanishevskii
Role of extinguisher of emission in the process of malignization, by B. S. Pesochenskii
Polarographic analysis and diagnosis of cancer, by B. I. Zbarskii and I. E. El'piner
Discussions
Summary of the Presiding Officer of the Conference
(See also 62-24588-3)

SOVIET MEDICAL PRACTICES. 3 Oct 61 [21]p. 11 refs. JPRS: 10402.
Order from OTS or SLA $2.60 61-28877

Trans. of Zdravookhranenie Kazakhstana (USSR) 1961 [v. 21] no. 5, p. 5-8, 11-16, ##71-73.
##Another trans. is available from OTS or SLA $1.60 as 61-28880, JPRS-10321, 2 Oct 61 [14]p.

DESCRIPTORS: Inhibition, *Rheumatism, *Cancer, Esophagus, Scientific reports.

Contents:
Experience in the prophylaxis of rheumatism in adults, by E. I. Tsukershtein and V. M. Karlinskii
Certain problems in cancer of the esophagus, by M. A. Akhmedov
##Scientific session of the Institute of Therapy, Academy of Medical Sciences USSR (no. 9) by N. Kuchin.

Alekseev, A.
THE OBJECT IS HUMAN HEALTH. 20 June 62 [18]p. JPRS: 14203.
Order from OTS or SLA $1.60 62-25480

Trans. of Nedelya (USSR) 1961, 26 Nov-2 Dec, p. 8-9.

DESCRIPTORS: *Public health, Diseases, *Cancer, Coal tar, Anilines, Pathology, Hormones, *Viruses, Chemicals, X-rays, Cells (Biology), Genetics, Circulary system, *Hypertension, *Arteriosclerosis, Heart, Thrombosis.

Anguera, George and Schwartz, Daniel.
A CONTRIBUTION OF THE ETIOLOGY OF RETINAL VASCULAR DISORDERS: STUDY OF CERTAIN FACTORS, PARTICULARLY ALCOHOL AND TOBACCO. Nov 60, 23p.
Order from K-H $28.75 K-H 10402-2

Trans. of Rev[ue de l']Athérosclér[ose] (France) 1959, v. 1, p. 239-255.

DESCRIPTORS: *Retina, *Blood circulation, Diseases, *Alcohols, *Tobacco, Smokes, Cigarettes, Nicotine.

Bastai, Pio.
CHRONIC TOBACCO POISONING IS THE CAUSE OF PREMATURE AGING AND PROMOTES THE APPEARANCE OF SERIOUS CARDIOVASCULAR AND PULMONARY DISEASES. [1962] 18p.
Order from K-H $22.50 K-H 9298-b

Trans. of Rassegna Clinico-Scientifica (Italy) 1958, v. 34, no. 12, p. 305-311.

DESCRIPTORS: *Tobacco, Smokes, Nicotine, Cigarettes, *Aging, Diseases, *Respiratory system, *Circulatory system.

Berard, Jacques.
CANCER OF THE BRONCHI AND TOBACCO. [1962] 19p.
Order from K-H $23.00 K-H 3359-a

Trans. of Revue de la Tuberculose (France) 1954, ser. 5, v. 18, p. 567-576.

DESCRIPTORS: *Cancer, *Lungs, *Tobacco, Smokes, Cigarettes, Nicotine.

Carella, Antonio.
EXPERIMENTAL RESEARCHES ON INJURIES PRODUCED BY GLASS SPLINTERS (Ricerche Sperimentali sulle Lesioni Prodotte da Frammenti di Vetro). [1962] [15]p. (foreign text included) 7 refs.
Order from SLA $1.60 62-16415

Trans. of Zacchia (Italy) 1953, v. 16, p. 370-376.

DESCRIPTORS: *Injuries, *Glass, Wounds.

Basing his observations on the results of experimental researches still in progress, the author illustrates the characteristic traits of injuries, produced by glass-fragments. He states that these wounds should be included among those produced by pointed four-edged cutting means. (Author)

Cesio, Fidias R.
PSYCHOANALYTIC INTERPRETATION OF THE SMOKING HABIT. [1962] 10p.
Order from K-H $12.50 K-H 8619-c

Trans. from [Revista de Psicoanalisis] (Argentina) 1957, v. 14, no. 4.

DESCRIPTORS: *Psychology, *Tobacco, Smokes, *Cigarettes, Nicotine.

Frau, G.
EFFECT OF TOBACCO SMOKE ON THE HEMODYNAMICS OF HEALTHY SMOKERS AND NON-SMOKERS. [1962] 15p.
Order from K-H $18.75 K-H 3178-b

Trans. of Folia Cardiologica (Italy) 1952, v. 10, suppl, p. 272-282 (Soc[ietà] Italiana di Cardiologia. Atti, 1951, v. 13).

DESCRIPTORS: *Tobacco, *Smokes, Cigarettes, *Blood.

Gennes, L. de, Bricaire, H. and others.
A NEW TEST OF PITUITARY INVESTIGATION: THE METOPIRON OR SU 4885 TEST (18 CASES OF OUR OWN) (Un Nouveau Test d'Exploration Hypophysaire: Le Test au Methopyrone ou Su 4885 (a Propos de 18 Observations Personnelles). [1962] [1]p.
Order from SLA $1.10 62-14631

Trans. from [1a] Presse Med[icale] (France) 1961, v. 69 [no. 23] p. 1042.

DESCRIPTORS: *Pituitary gland, Pathology, Secretion, *Biochemical tests, Adrenal gland, Diagnosis.

This substance produces an inhibition of the corticol secretion by the adrenals and consequently produces an increased ACTH secretion in the anterior pituitary; this in turn provokes an increase of 17-hydroxycorticoids in the plasma and urine. The results obtained confirm those already obtained by G. W. Liddle in regard to pituitary insufficiency. In regard to hemochromatosis, it was possible to establish in several cases that the hypophysis is responsible for the polyglandular syndrome often accompanying this condition. (Extracted)

Grynkraut, B.
PULMONARY CANCER AND TOBACCO: IMPORTANCE OF THE HORMONAL, NERVOUS, AND INFLAMMATORY FACTORS. [1962] 5p.
Order from K-H $6.25 K-H 5225-a

Trans. of Revista Brasileira de Médicina, 1954, v. 11 [no. 12] p. 831-833.

DESCRIPTORS: *Lungs, *Cancer, *Tobacco.

Gsell, Otto.
TOBACCO AND CANCER: CLINICAL AND STATISTICAL COLLECTIONS (WITH SPECIAL CONSIDERATION OF SWITZERLAND). [1962] 45p.
Order from K-H $56.25 K-H 6344

Trans. of Oncologia (Switzerland) 1957, v. 10, p. 157-186.

DESCRIPTORS: *Tobacco, *Cancer, Switzerland, Statistics.

Guaradabasso, Biagio.
ON A NEW METHOD OF QUALITATIVE SEARCH FOR NICOTINE IN THE VISCERA. [1962] 6p.
Order from K-H $7.50 K-H 5367-a

Trans. of Minerva Médicolegale (Italy) 1956, v. 76 [no. 1] p. 12-13.

DESCRIPTORS: *Nicotine, *Tissues (Biology).

Gyurech-Vago, E. and Scherfer, M.
CORRELATION BETWEEN CHRONIC BRONCHITIS AND BRONCHIAL CARCINOMA. [1962] 19p.
Order from K-H $23.75 K-H 8973-b

Trans. of Schweizerische Medizinische Wochenschrift, 1958, v. 88, no. 45, p. 1132-1136

DESCRIPTORS: Infections, Inflammation, *Respiratory diseases, *Cancer.

Kakhyani, Z. N.
THE CANCEROGENIC ACTION OF TOBACCO TARS. [1962] 10p.
Order from K-H $12.50 K-H 5253-b

Trans. of Voprosy Onkologii (USSR) 1955, v. 1, no. 3, p. 96-100.

DESCRIPTORS: *Cancer, *Tobacco, Smokes, Cigarettes, Nicotine, Tar, Toxicity.

Körbler, Juŕak, Frank Pavao, and Turner, Viktor.
THE DEPENDENCE OF THE CANCEROGENIC EFFECT OF TOBACCO DISTILLATES ON THE POINT OF APPLICATION. [1962] 5p.
Order from K-H $6.25 K-H 9249-a

Trans. of Oncologia (Switzerland) 1959, v. 12 [no. 1, p. 22-27].

DESCRIPTORS: Etiology, *Cancer, *Tobacco, Smokes, Nicotine, Cigarettes.

Kreis, Willi.
LUNG CARCINOMA AND TOBACCO CONSUMPTION. Doctoral thesis, Zurich U. [1962] 18p.
Order from K-H $22.50 K-H 7036 a

Trans. of unidentified mono. pub. [Zurich], n.d.

DESCRIPTORS: *Cancer, *Lungs, *Tobacco, Smokes, Cigarettes, Consumption.

Laskowski, Kazimierz.
COMPONENTS OF TOBACCO AND THEIR ABSORPTION IN THE RESPIRATORY SYSTEM OF THE SMOKER. [1962] 32p.
Order from K-H $40.00 K-H 3759-a

Trans. of Roczniki Panstwowego Zakladu Higieny (Poland) 1951, v. 2, p. 139-160.

DESCRIPTORS: *Tobacco, *Smokes, Cigarettes, *Chemical analysis, Absorption, *Respiratory system

Lausz, Helen.
THE INFLUENCE OF COMPONENTS OF TOBACCO SMOKE ON THE CILIATED EPITHELIUM. [1962] 5p.
Order from K-H $6.25 K-H 8043-a

Trans. of Otolaryngologia Polska, 1957, v. 11, no. 2, p. 170-174.

DESCRIPTORS: *Tobacco, *Smokes, Cigarettes, *Epithelium, Respiratory system.

Lickint, F.
RECENT OBSERVATIONS IN THE FIELD OF THE RELATION BETWEEN SMOKERS' BRONCHITIS AND BRONCHIAL CANCER. [1962] 7p.
Order from K-H $8.75 K-H 9149-b

Trans. of Deutsch[e] Gesellsch[aft für Inn[ere] Med[izin]. Verhandl[ungen] (West Germany) 1956, v. 62, p. 121-125.

DESCRIPTORS: *Lungs, *Cancer, *Tobacco, Smokes, Cigarettes.

Mallet, L. and Heros-Dekeirel.
PULMONARY ANTHROCOPYROSIS AND MEDIASTINA CANCERS: BRONCHIAL AND ESOPHAGIAL. [1962] 7p.
Order from K-H $8.75 K-H 8500-c

Trans. of Annales de Médecine Légale (France) 1958, v. 38, p. 150-154.

DESCRIPTORS: Diseases, *Lungs, Respiratory system, *Cancer, *Esophagus, *Thorax.

Mendonca de Barros, L.
SMOKING AND ANGINA PECTORIS. [1962] 8p.
Order from K-H $10.00 K-H 6049-a

Trans. of Rev[ista] Brasileira de Méd[icina] 1956, v. 13, no. 7, p. 553-555.

DESCRIPTORS: *Tobacco, *Angina pectoris, Smokes, *Cigarettes.

Mirzoeva, M. E.
PREPARATION OF A DRY LEUKOCYTE AND EXPERIMENTAL STUDY OF ITS ACTION. 14 Aug 62 [11]p. 8 refs. JPRS: 14830.
Order from OTS or SLA $1.60 62-32443

Trans. of Azerbaidzhanskii Meditsinskii Zhurnal (USSR) 1962, no. 2, p. 67-71.

DESCRIPTORS: *Leukocytes, *Transfusions, Therapy, Preparation, Leukopenia, Toxicity

A dry leukocyte mass solution dried under vacuum at a temperature of 40-50° proved to be atoxic when injected experimentally. The entire leukocyte mass prepared was transfused into patients with leukopenias of different etiology: radiation sickness resulting from X-ray treatment of cancer of the internal organs, primary refractory anemia, Hodgkin's disease, metamalaria, agranulocytosis, etc. Observations showed that leukocyte transfusions for leukopenic conditions help to raise the leukocyte count. The dry leukocyte mass solution was not pyrogenic. The dry leukocyte mass solution did not possess anaphylactic properties. The data provide grounds for believing that the dry leukocyte mass solution can be readily tolerated by recipients.

Miskiewicz, Henryk.
NICOTINE AND PEPTIC ULCER. [1962] 15p.
Order from K-H $18.75 K-H 8535-c

Trans. of Polski Tygod[nik] Lek[arski] 1957, v. 12, no. 49, p. 1881-1885.

DESCRIPTORS: *Peptic ulcers, *Nicotine

Möhlmann, H., Mass, A., and Meese, M.
INVESTIGATIONS OF AND PROPOSALS FOR TESTING OF ERYSIPELAS ADSORBATE VACCINE. [1962] [33]p.
Order from SLA $3.60 62-10704

Trans. of Archiv für Experimentelle Veterinärmedizin (Germany) 1961, v. 15, no. 1, p. 150-181.

DESCRIPTORS: Streptococcus infections, Skin, *Immunization, *Swine erysipelas, Lymphatic system, Vaccines.

Conjunctival infection is proposed for the effectiveness test on swine. Reasons are given for this proposal. Proof is furnished that the degree of skin reactions after cutaneous infection and immunity of the whole organism to erysipelas septicemia are not in a constant relation to each other. The rating of skin reactions after cutaneous infection as criterion for the immunity of swine to erysipelas septicemia and thus for the effectiveness of the erysipelas vaccine is rejected as being no longer scientifically justified. (Author)

Nagylucskay, Sandor.
THE AMOUNT OF NICOTINE ENTERING THE BODY DURING SMOKING. [1962] 14p.
Order from K-H $17.50 K-H-11181

Trans. of Egeszsegtudomany (Hungary) 1960, v. 4, p. 317-324.

DESCRIPTORS: Tobacco, *Nicotine, *Smokes, Absorption, Cigarettes.

Parrinello, Giacomo, Bellomo, Gaetano, and Blandino, Giorgio.
CLINICAL RADIOLOGICAL STUDIES OF A CASE OF "TYPUS AMSTELODAMENSIS" (Studio Clinico-Radiologico di un Caso di "Typus Amstelodamensis"). [1962] 11p. (16 figs. omitted).
Order from SLA $1.60 62-14515

Trans. of Minerva Pediatrica (Italy) 1957, v. 9 [no. 29/30] p. 785-792.

DESCRIPTORS: *Congenital anomalies, Genetics, X-rays, *Diagnosis, Bones, Tissues (Biology)

Pavel, I. Ceausu, Gh. and others.
INSULIN THERAPY AND DIABETIC ARTERITIS: THE ETIOLOGIC ROLE OF INSULIN. Nov 61 [13]p. 13 refs.
Order from SLA $1.60 62-14938

Trans. of la Presse Medicale (France) 1961, v. 69, no. 21, p. 912-914.

DESCRIPTORS: Drugs, *Insulin, Therapy, *Diabetes, *Arteries, Etiology, Diseases.

The statistical study of the incidence of arteritis in 6,000 diabetics shows a doubled incidence of arteritis in diabetics treated with insulin. Analysis of this increase shows that the frequency of arteritis is directly related to the dose of insulin required. This is not due exclusively to the prolongation of life or to the severity of the diabetes (the increase is apparent

at doses of only 10 units daily), but rather to a vasonoxious action of insulin itself. The atherogenic action of insulin is greater in the hereditary diabetic especially amongst obese male diabetics. The atherogenic mechanism of exogenous insulin is attributed to the direct effect of stimulation of the synthesis of lipids and in particular of cholesterol, as well as an indirect effect on the mobilization of lipids as a result of stress, which produces a discharge of the hypophysial-cortico-suprarenal hormones. Finally, insulin may act directly by inhibition of lipolysis and by its effect on lipopexy resulting from its antiheparin action (inhibition of lipid clearing factor of the serum and liberation of hyaluronidase action). Prophylaxis of the arteritis demands, therefore, the diminution, wherever possible, in the insulin dose by a regime restricted moderately in carbohydrates by the use of depot insulin and oral sulfonamide medications whenever this is possible. (Author)

Pestalozza, Giulio.
CLINICAL AND HISTOPATHOLOGICAL CONSIDERATIONS ON THE ACTION OF TOBACCO SMOKE ON THE BRONCHIAL MUCOSA. [1962] 13p.
Order from K-H $16.25 K-H 9440-a

Trans. of Arch[ivio] Ital[iano di] Otol[ogia, Rinologia, e Laringologia] 1959, v. 70, no. 1, p. 84-95.

DESCRIPTORS: *Tobacco, Smokes, *Cigarettes, Nicotine, *Lungs, *Mucous membranes,

Ravina, A.
THE EFFECTS OF TOBACCO AND GRAIN ALCOHOL ON THE CARDIOVASCULAR SYSTEM. [1962] 7p.
Order from K-H $8.75 K-H 3779-h

Trans. of la Presse Médicale (France) 1955, v. 63, no. 37, p. 765.

DESCRIPTORS: *Tobacco, Smokes, Cigarettes, *Heart, *Blood circulation, *Ethanols.

Rubel', V. M.
BIOCHEMISTRY OF THE HEART MUSCLE IN MYOCARDIAL INFARCTS. 17 Aug 62 [18]p. 77 refs. JPRS: 14885.
Order from OTS or SLA $1.60 62-32457

Trans. of Voprosy Meditsinskoi Khimii (USSR) 1962, v. 8, no. 3, p. 227-236.

DESCRIPTORS: *Biochemistry, *Cardiac muscle, *Thrombosis, Arteries, Heart.

Sipila, W., Taipale, E. and others.
INDEPENDENT PRESSURE RISE IN THE LESSER BLOOD CIRCULATION (ESSENTIAL PULMONARY HYPERTENSION) (Itsenäisestä Paineen Kohoamisesta Pienessä Verenkierrossa (Essentiellistä Pulmonaali-Hypertensiosta). [1961] 3p.
Order from SLA $1.10 62-10589

Trans. of Duodecim (Finland) 1953, v. 69, p. 631-643.

DESCRIPTORS: *Blood pressure, *Blood circulation, *Lungs, Hypertension.

Two cases seen at the Wihurin Research Institute Hospital are reported.

Stepanyan, E. S.
RESPIRATORY FUNCTION IN TUBERCULOSIS AND OTHER CHRONIC DISEASES OF THE LUNGS. [1962] 26p. 38 refs. [NIH] no. 152.
Order from OTS or SLA $2.60 62-23501

Trans. of Sovremennye Problemy Tuberkuleza (USSR) 1956, v. 7, no. 4, p. 3-13.

DESCRIPTORS: *Respiration, *Tuberculosis, Diseases, *Lungs, Surgery, Circulatory system.

Tentschov, G., Andreev, V. and others.
LYMPHANGIOSARCOMA ASSOCIATED WITH LYMPHEDEMA FOLLOWING REMOVAL OF A BREAST (MASTECTOMY) (STEWART-TREVES SYNDROME) (Lymphangiosarkom bei Lymphödem nach Ablatio Mammae (Stewart-Treves-Syndrom)). [1962] 8p. (5 figs. omitted).
Order from SLA $1.10 62-14514

Trans. of der Hautarzt (West Germany) 1961, v. 12 [no. 9] p. 399-402.

DESCRIPTORS: *Sarcoma, *Mammary glands, Surgery, *Excision, Edema, Lymph.

A 53 year old woman with lymphangio sarcoma of the right arm is presented. She was operated upon 11 years ago for a breast cancer and she developed a chronic lymphedema of the right arm. The patient refused the proposed dissarticulation of the arm. The authors believe that the pathogenesis of this sarcoma rests in the association of the chronic edema, the neurotropic disturbances, and the pathologic angioblastic reaction. (Author)

Venulet, Francis.
PATHOGENESIS OF PEPTIC ULCERS WITH PARTICULAR CONSIDERATIONS OF THE CEREBRAL CORTEX, SUPRARENAL CORTEX, VITAMIN C, AND THE SMOKING HABIT. [1962] 13p.
Order from K-H $16.25 K-H 3166-c

Trans. of Polski Tygodnik Lekarski, 1953, v. 8, no. 15, p. 553-556.

DESCRIPTORS: Pathology, *Peptic ulcers, Cerebral cortex, Adrenal glands, Ascorbic acid, Tobacco, Smokes, Nicotine, *Cigarettes.

Vrasse, R., Payen, J., and Rouchan, C.
CONCERNING A CASE OF POPULAR LEUKOKERATOSIS OF THE PALATE IN A PIPE SMOKER. [1962] 8p.
Order from K-H $10.00 K-H 11455-g

Trans. of Revue de Stomatologie (France) 1960, v. 61, no. 6, p. 326-330.

DESCRIPTORS: *Smokes, *Tobacco, Nicotine, *Mouth, *Diseases.

Wolfenbüttel, E[rvin].
TOBACCO AND DISEASES [O Fumo e as Doenças]. [1962] 5p.
Order from K-H $6.25 K-H 6950

Trans. of Revista Brasileira de Médicina, 1957, v. 14, no. 4 [p. 252-253].

DESCRIPTORS: *Tobacco, *Diseases.

Pharmacology and Toxicology

Aceves Ortega, Raúl.
THE USE OF HYDROCORTISONE OINTMENT IN THE TREATMENT OF VARIOUS DERMATOSES. [1962] 7p. 11 refs.
Order from SLA $1.10 62-16057

Trans. of [Sinopsis Medica Internacional] (U. S.) 1955, v. 3, p. 13-17 and 19-20.

DESCRIPTORS: Drugs, *Ointments, *Adrenal cortical extract, Therapy, *Diseases, *Skin.

Akopyan, O. A.
COLORIMETRIC DETERMINATION OF ATROPA ALKALOIDS IN PHARMACEUTICAL PREPARATIONS. [1962] [4]p.
Order from OTS or SLA $1.10 62-18053

Trans. of Aptechnoe Delo (USSR) 1958, v. 7, no. 2, p. 19-22.

DESCRIPTORS: *Colorimetric analysis, *Atropine, *Alkaloids, Drugs.

A method is proposed for the colorimetric determination of atrepa alkaloids like atropine, hyosciamine, and scopolamine with p-dimethylaminobenzaldehyde in sulfuric acid. The method was applied to the pure substances, as well to the different pharmaceutical preparations. (Author)

Battegay, R.
ADDICTION AFTER DORIDEN ABUSE (Sucht nach Abusus von Doriden). [1962] 4p. 13 refs.
Order from SLA $1.10 62-14998

Trans. of Praxis (Switzerland) 1957 [v. 46] 7 Nov, p. 991-992.

DESCRIPTORS: Drugs, *Toxicity, *Doriden.

The glutaric acid imide derivative Doriden (Glutethimide) is described as a very active hypnotic of medium duration of action. The causes of habituation to Doriden and addiction to this drug in 6 patients who for this reason were admitted 8 times to our clinic since mid-1956 and therapy of the addicts are discussed. (Author)

Caneghem, D. Van.
THE VESTIBULAR SOUND REACTION IN THE CHRONIC INTOXICATION OF THE AUDITORY APPARATUS BY TOBACCO. [1962] 15p.
Order from K-H $18.75 K-H 3546-a

Trans. of Acta Oto-Lar[yngologica] (Sweden) 1954, v. 44, no. 5/6, p. 525-531.

DESCRIPTORS: *Ear, Hearing, *Toxicity, *Tobacco, Cigarettes, Smokes, Nicotine. *Sound transmission.

Dolique.
SOME CONSIDERATIONS ON THE INDUSTRIAL MANUFACTURE OF PHARMACEUTICAL TABLETS [Quelques Considérations sur la Fabrication Industrielle des Comprimés Pharmaceutiques]. [1962] 54p. 23 refs.
Order from SLA $5.60 62-10964

Trans. of J[ournal de] Pharm[acie de] Belgique, 1960, v. 15 [no. 7/8] p. 229-268.
Another trans. is available from SLA $5.60 as 62-10265 [1961] 51p.

DESCRIPTORS: *Drugs, Manufacturing methods, *Particles, *Adhesion, Powders.

Dresse, A. and Sodoyez, J. C.
ACTION OF GUANETHIDINE ON THE BLOOD PRESSURE AND UTERUS OF RATS (Action de la Guanethidine sur la Pression Artérielle et sur l'Uterus du Rat). [1962] 3p. 3 refs.
Order from SLA $1.10 62-10736

Trans. of Soc[iété de] Biol[ogie et de ses Filiales]. C[omptes] R[endus des Séances] 1961, v. 154, May, p. 2399-2401.

DESCRIPTORS: Drugs, *Guanethidine, *Blood pressure, *Uterus, Rats.

In rats guanethidine produces polyphasic changes of blood pressure comparable to those observed in dogs and cats, a brief and weak hypotension, a considerable hypertension lasting 10-15 minutes, and a very prolonged hypotension. The first two phases have a more rapid course in rats than in dogs and cats. The hypertensive phase is due to a sympathicomimetic effect specific for guanethidine and not to the massive liberation of endogenous catecholamines. (Author)

Endler, F.
PRACTICAL EXPERIENCES WITH A NEW ANABOLIC AGENT (Praktische Erfahrungen mit Einem Neuen Anabolen Wirkstoff). [1962] [1]p.
Order from SLA $1.10 62-10733

Trans. from Münch[ener] Med[izinische] W[ochen]-schr[ift] (West Germany) 1961, v. 103, July, p. 1386.

DESCRIPTORS: Drugs, *Metabolism, Bone, Diseases, *Dianabol, Surgery, *Nutrition.

This is a report on the results of therapy with a new anabolic agent with full peroral activity (methyl-androstenolone, Dianabol CIBA). The new preparation was used on 250 patients with osteoporosis of different origin and severity and the results were very good. In about 82% subjective increase in strength and weight gain from 1 to 3 Kg. after 4 wks. of therapy with daily doses of 2.5 to 10 mg. By improvement of the metabolism under Dianabol administration the tolerance to extensive surgery and also the postoperative phase of healing could be influenced surprisingly favorably. With daily doses of 5 mg. a sufficient protein-anabolic effect was obtained without any virilizing side effects. (Author)

Endler, F.
PRACTICAL EXPERIENCES WITH A NEW ANABOLIC SUBSTANCE (Praktische Erfahrungen mit einem Neuen Anabolen Wirkstoff in der Orthopädie. [1961] [1]p.
Order from SLA $1.10 62-14646

Trans. of Wien[er] Klin[ische] W[ochen]schr[ift] (Austria) 1961, v. 73, no. 7, p. 131.

DESCRIPTORS: *Drugs, *Dianabol, *Androgens, Surgery.

Gordienko, E. A.
CERTAIN INDICES OF NITROGEN METABOLISM OF THE BRAIN IN ACUTE CARBON MONOXIDE POISONING. [1962] [10]p. 31 refs.
Order from OTS or SLA $1.10 62-14715

Trans. of Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya (USSR) 1960, v. 4, no. 2, p. 54-58.

DESCRIPTORS: Measurement, *Nitrogen, Metabolism, *Brain, *Carbon monoxide poisoning, Glutamine.

Acute and sub-acute CO poisoning in the brain is accompanied by an accumulation of considerable quantities of ammonia and residual nitrogen more pronounced with sub-acute poisoning in the absence of changes of insignificant increase of free glutamine in the brain. Sub-acute poisoning after 24 to 48 hrs leads to a decrease of amide nitrogen of the proteins in the brain averaging 10 mg%. (Author)

Gordon, B. G.
CHANGES OF THE AMMONIA AND GLUTAMINE CONTENT IN THE BRAIN OF RATS IN ADMINISTRATION OF SODIUM BROMIDE AND CAFFEINE AND IN CARBON TETRACHLORIDE POISONING. [1962] [4]p. 10 refs.
Order from OTS or SLA $1.10 62-14703

Trans. of #Byull[eten'] Eksp[erimental'noi] Biol[ogii i] Med[itsiny] (USSR) 1959, v. 48, no. 11, p. 69-73.

DESCRIPTORS: Metabolism, *Brain, Rats, *Ammonia, *Glutamine, Sodium compounds, Bromides, Caffeine, *Carbon tetrachloride, *Poisoning

Caffeine injections in rats did not evoke an increase of ammonia and glutamine. Small doses of sodium bromide evoked no increase of ammonia and glutamine content in the brain of rats. But in case of large doses the content of ammonia and glutamine in the brain increased significantly: +45% for ammonia, +43% for glutamine. If CCl_4 is administered to rats following a prolonged period of injections of small doses or a brief period of injections of large doses of sodium bromide, than the increase of ammonia and glutamine in the brain remains very high, +74% and +80%, in case of small doses and +66% and 77% in case of large doses. If the longevity of the rats is considered, it is found that some of the rats which received CCl_4 after the caffeine administration died, in spite of a comparatively better outward appearance, while none of the rats, in spite of a very grave condition, died, after the treatment with large doses of sodium bromide and CCl_4. It is possible that this is connected with the lowered sensitivity because of the NaBr treatment of the CNS to the toxic agents (CCl_4 and ammonia). During a state of prolonged medicamental sleep an extremely high content of ammonia and glutamine was found in the brain of animals because of destruction of the urine forming function of the liver under these conditions; however, none of the animals died.

Greve, W. and Schönberg, F.
ADDICTION AND WITHDRAWAL PHENOMENA WITH BARBITURATE-FREE HYPNOTICS (Sucht und Entziehungserscheinungen bei Barbituratfreien Schlafmitteln). [1962] 7p. 23 refs.
Order from SLA $1.10 62-16613

Trans. of D[eu]tsch[e] Med[izinische] W[ochen]-schr[ift] (West Germany) 1961, v. 86, 25 Aug, p. 1606-1608.

DESCRIPTORS: *Drugs, *Barbituates, *Toxicity, Sleep, Convulsions, Electroencephalography, Glutaric acid, Amides, Carbamic acid.

Glutethimide (Doriden) and ethinamate (Valamin) two non-barbiturate hypnotics, have been used in recent years because of their good tolerance. Abuse and addiction have been described for these drugs. On withdrawal convulsions and deliria have occasionally been observed. One case of Valamine addiction, two cases of pure Doriden addiction and two cases in which Doriden was taken with other drugs have been reported. All patients were differentiated personalities, who consciously selected the non-prescription drugs, declared to be without after-effects. Psychopathologically as well as somatically we did not find in our cases any picture specific for one of the two drugs. Likewise the EEG changes corresponded to those described for other hypnotics. (Author)

Jacob, D.
TWO CASES OF DORIDEN ABUSE (Über Zwei Fälle von Doriden-Abusus). [1962] 7p. 24 refs.
Order from SLA $1.10 62-16610

Trans. of Nervenarzt (Germany) 1958, v. 29, p. 366-367.

DESCRIPTORS: Toxicity, Drugs, *Psychoses, *Narcotics, *Doriden.

The glutaric acid imide hypnotic Doriden can cause addiction in those so disposed, in particular in the form of a secondary addiction. Two cases are described, one of which showed a peculiar delirious state during the withdrawal phase, possibly typical for Doriden. The dominating anxious depressive basic mood which also supported the illusional ideas, was characterized by the sensation of a breath of death coming from the patient, in which the environment seemed to become cold, extinguished, darkening and wilting. This delirium was replaced by an ecstatic-euphoric mood lasting several weeks. (Author)

Kutschera, E.
CLINICAL EXPERIENCES WITH ISMELIN (Klinische Erfahrungen mit Ismelin). [1962] 9p. 11 refs.
Order from SLA $1.10 62-10730

Trans. of [Klinische] Monatsblätter für Augenheilkunde (West Germany) 1961, v. 139, p. 234-241.

DESCRIPTORS: Drugs, *Guanethidine, *Glaucoma, *Diseases, *Eye, Autonomic nervous system.

A report is given on guanethidine (Ismelin, CIBA), a drug with a sympathicolytic effect which on local application causes lowering of the intraocular tension in the normal eye as well as in eyes affected with simple glaucoma or secondary glaucoma. The effect might be due to a decrease in the outflow resistance of the aqueous humour. Its advantage over pilocarpine consists in the longer-lasting action, the less significant miosis and in the fact that accommodation remains uninfluenced. It therefore can be recommended for therapy in juvenile glaucoma, in beginning simple glaucoma of middle-aged persons and in glaucoma associated with senile cataract. Also in cases of secondary glaucoma a therapeutic trial with Ismelin is advisable. The hyperemia of the conjunctival vessels which is sometimes associated with the application of the drug can presumably be resolved by a lower concentration and appropriate buffering. (Author)

Loubatieres, A.
ANALYSIS OF THE ANTIDIABETIC ACTION OF THE HYPOGLYCEMIC SULFONAMIDES: BASES FOR ITS UTILIZATION TO PRODUCE PROLONGED REMISSIONS OR PREVENTION OF DIABETES. 26 Apr 61 [21]p. 49 refs.
Order from SLA $2.60 62-14939

Trans. of la Presse Médicale (France) 1960, v. 68 [no. 39] p. 1441-1444.

DESCRIPTORS: Drugs, *Diabetes, *Sulfonamides, *Hypoglycemia, Inhibition

The author reviews the experimental and clinical data which allow one to attribute an anti-diabetic action to these substances. (Author)

Markaryan, M., Rizhov, N., and Shchannikov, E.
ON THE MECHANISM OF THE DISINFECTING ACTION OF PREPARATION KARBOFEROGEL-M (Kum Mekhanizma na Obezzarazyavashtoto Deistvie na Preparata Karboferogel-M). 1 Dec 60 [9]p. JPRS: 7243.
Order from OTS or SLA $1.10 62-19378

Trans. of Voenno Meditsinsko Delo (Bulgaria) 1960, v. 15, no. 1, p. 21-24.

DESCRIPTORS: *Disinfectants, Absorption, *Encephalitis viruses, *Escherichia, *Anthrax.

Research work suggests that Karboferogel-M has adsorptive qualities concerning the Taylor virus, bacterium coli and anthracoid. By filtering solutions through Karboferogel-M we increase the basic elements in the filtrates (up to pH 10), which in turn act destructively on the microorganisms. The vital action of the aforementioned microbes and virus adsorbed by Karboferogel-M does not confirm that Karboferogel acts oligodynamically.

Mohnike, G., Ulrich, H., and Jutzi, E.
CRITERIA FOR THE USE OF D 860 IN THE TREATMENT OF DIABETES MELLITUS. [1962] 3p.
Order from SLA $1.10 62-14946

Trans. of Deutsche Medizinische Wochenschrift (West Germany) 1957, v. 82 [no. 36] p. 1514-1515.

DESCRIPTORS: *Diabetes, *Drugs, Therapy, Urea, Benzyl tosylates, Tuberculosis.

Mohnike, G., Ulrich, H., and Jutzi, E.
LONG-TERM RESULTS OF D860 TREATMENT OF DIABETES. [1962] [6]p.
Order from SLA $1.10 62-14947

Trans. of Deutsche Medizinische Wochenschrift (West Germany) 1957, v. 82 [no. 36] p. 1524-1525.

DESCRIPTORS: *Diabetes, *Drugs, Therapy, Urea, Benzyl tosylates.

Montestruc, E. and Benoist, J.
BACTERIOLOGICAL ACTION OF 4-BUTOXY-4'-DIMETHYLAMINO-THIOCARBANILIDE IN CASES OF LEPROSY OF THE LEPROMATOUS TYPE AND ON DIMORPHOUS ONES RESISTANT TO SULFONES (Action Bacteriologique du p-n, n-Dimethylamino-phenyl-1 p-n, Butoxyphenyl-3, Thio-2, Uree sur les Lepres du Type Lepromateux et Dimorphes Sulfono-Resistantes). [1962] [4]p. 6 refs.
Order from SLA $1.10 62-10912

Trans. of Soc[iete de] Path[ologie] Exot[ique]. Bull[etin] (France) 1960, v. 53 [no. 1] p. 13-16 (Also pub. in Inst[itut] Pasteur [de la] Martinique. Arch[ives] 1960, v. 13, p. 17-19.

DESCRIPTORS: Drugs, Therapy, *Leprosy, *Sulfones, *Thiourea derivatives, Bacteria, Tissues (Biology), Methyl radicals, Amines, Alkoxy radicals, *Anilides, Thio radicals.

Morocutti, C. and Sergio, C.
THE ACTION OF SOME SYMPATHICOMIMETRIC SUBSTANCES OF NICOTINE CONVULSIONS IN THE RABBIT. [1962] 14p.
Order from K-H $17.50 K-H 8650-b

Trans. of Rivista di Neurologia (Italy) 1958, v. 28, no. 2, p. 216-226.

DESCRIPTORS: *Autonomic nervous systems, *Toxicity, *Nicotine, Convulsions, Rabbits.

Niremberg, V. and Maciel, R.
CLINICAL TRIAL WITH GUANETHIDINE (ISMELIN) (Ensaio Clinico com a Guanetidina (Ismelina)). [1962] 5p.
Order from SLA $1.10 62-18049

Trans. of O Hospital (Brazil) 1962, v. 61 [no. 2] p. 331-335.

DESCRIPTORS: *Guanethidine, Drugs, *Vasomotor drugs, *Blood pressure, Circulatory system, Pharmacology.

Guanethidine (Ismelin) was effective in 21 of the 25 patients. In 2 of the 3 patients in whom the pressure values increased, the Regitine test proved to be clearly positive and thus the presence of a pheochromocytoma was probable. In only 3 cases was it necessary to stop medication because of severe diarrhea. Guanethidine had a marked bradycardiac effect, and in some cases it reduced the heart rate to 48 beats per minute. The heart rate which was 89.6 before treatment, fell to 74.4 during use of the drug. (Author)

Raffauf, H. J.
OBSERVATIONS ON THE USE OF DORIDEN (Beobachtungen beim Doridengebrauch). [1962] 2p.
Order from SLA $1.10 62-16611

Trans. of D[eu]tsch[e] Med[izinische] W[ochen]schr[ift] (West Germany) 1958, v. 83, 14 Nov, p. 2063-2064.

DESCRIPTORS: *Toxicity, Drugs, Dosage, Narcotics, Psychoses, *Doriden.

Examples are mentioned of chronic abuse, acute intoxications and the agranulocytosis with normal dosage, which sufficiently demonstrate that Doriden is by far not as harmless as we assumed up to now. Moreover the assumption expressed in several publications, that addiction and habituation as well as damage of the blood-forming system do not occur, cannot be maintained according to our observations. Doriden is a valuable hypnotic, but it is important also to know its dangers.

Ravina, A.
TOBACCISM AND MORTALITY RATE. [1962] 6p.
Order from K-H $7.50 K-H 3390-e

Trans. of la Presse Médicale (France) 1954, v. 62, 6 Nov, p. 1529.

DESCRIPTORS: *Tobacco, Smokes, Cigarettes, Nicotine, Life expectancy, Toxicity.

Schöffling, K., Pfeiffer, E. F. and others.
RESULTS OF PROLONGED TREATMENT WITH D 860 IN 758 AMBULATORY PATIENTS. [1962] [8]p.
Order from SLA $1.10 62-14944

Trans. of Deutsche Medizinische Wochenschrift (West Germany) 1957, v. 82 [no. 36] p. 1515-1518.

DESCRIPTORS: *Diabetes, *Drugs, Therapy, Urea, Benzyl tosylates.

Of 1413 diabetics who received constant outpatient therapy, 42.8% were successfully controlled with D 860. The initiation of an oral antidiabetic drug is possible in the outpatient status in spite of frequently expressed opinion to the contrary if the necessary experience and possibility of checking the metabolism as well as consideration of the control criteria are present. If the correct method of therapy and suitable consultation with the patient is possible, then a good metabolic state can be achieved with 86% of the diabetics for the period of observation on an outpatient status. (Author)

Scholtan, W.
THE BINDING OF LONG-ACTING SULFONAMIDES TO SERUM PROTEINS. [1962] [30]p. (25 figs. 9 tables refs. omitted).
Order from SLA $2.60 62-16257

Trans. of Arzneimittel-Forschung (West Germany) 1961, v. 11, no. 8, p. 707-720.

DESCRIPTORS: *Molecular association, *Sulfonamides, Serum, Serum albumin, *Chemotherapeutic agents, *Blood proteins.

Schönfeld, H. and Seidl, S.
EXPERIMENTAL AND CLINICAL EXPERIENCE WITH WITH A NEW SULFONAMIDE IN PEDIATRICS. [1962] 8p. 35 refs.
Order from SLA $1.10 62-14094

Trans. of Chemotherapia (Switzerland) 1961, v. 3 [no. 1] p. 25-34.

DESCRIPTORS: Drugs, *Sulfonamides, *Pediatrics, Toxicity, *Chemotherapeutic agents.

Experimental studies of a new long-acting sulfonamide (methoxypyrimal) are reported. After a rapid rise in the plasma concentration, excretion is prolonged. Therapeutic levels are still detectable after 24 hours. The preparation, which can be given in a single daily dose, has no cumulative effect and diffuses well into extra-vascular spaces. Clinical experience in 56 patients confirms the experimental findings that methoxypyrimal is an active and well-tolerated long-acting sulfonamide. (Author)

Seidler, I., Endres, W. and others.
TWO YEARS' EXPERIENCE WITH D 860 IN THE TREATMENT OF DIABETES MELLITUS. [1962] [16]p.
Order from SLA $1.60 62-14945

Trans. of Deutsche Medizinische Wochenschrift (West Germany) 1957, v. 82 [no. 36] p. 1518-1524.

DESCRIPTORS: *Diabetes, *Drugs, Therapy, Urea, Benzyl tosylates.

Treatment with tolbutamide proved itself to be advantageous in a total of 630 patients over a two-year period of oral therapy. Generally speaking, only older patients with a moderate insulin requirement are well-suited for oral therapy. This therapy represents a substantial advantage for these patients. During the conversion from insulin to tolbutamide, it has been demonstrated that the quantity of insulin used to date can be cut up to one-half for many patients without any marked metabolic deterioration. This fact would argue for the case that many patients are receiving too much insulin. In these patients, the risk of insulin treatment is reinforced with a tendency toward hypoglycemic manifestations. These manifestations can have a particularly unfavorable effect in patients with advanced vascular changes. Tolbutamide has remarkably few side effects of a general or allergic nature. There is no change in the blood cell formula during tolbutamide therapy. Even in patients with leukopenia, tolbutamide therapy could be instituted over prolonged periods without further side effects. In part, the patients may have had idiopathic leukopenia. Excellent results were achieved with tolbutamide therapy in a series of patients with cirrhosis of the liver. Thus far, no demonstrable damage to the liver has occurred. (Author)

Semmler, F. and Damm, G.
BEHAVIOR OF SERUM POTASSIUM DURING HYDROCHLOROTHIAZIDE THERAPY (Über das Verhalten des Serumkaliums Während der Behandlung mit Hydrochlorothiazid). [1962] [1]p. (1 table 15 refs. omitted).
Order from SLA $1.10 62-10734

Trans. of abstract from die Med[izinische] Welt (West Germany) 1960, no. 25, p. 1379.

DESCRIPTORS: *Serum, *Potassium, Thiazoles, Diuretics, *Vasomotor drugs, Blood pressure, Edema, Toxicity, *Hypertension.

Tamamoto, Tsuyoshi.
STUDIES ON THE FATIGUE OF NEWLY EMPLOYED WORKERS IN THE TOBACCO FACTORY. [1962] 67p.
Order from K-H $83.75 K-H 11216

Trans. of Shikoku [Igaku Zasshi] (Japan) 1959, v. 14, no. 5, p. 897-932.

DESCRIPTORS: *Fatigue (Physiology), *Tobacco, Industrial plants, Personnel.

Vasilev, D. and Vulkov, Iv.
THE USE OF TOBACCO AS MEDICAL TREATMENT AGAINST PELLAGRA AT THE END OF THE XIX CENTURY IN THE MEDICINE OF THE LAYMEN. [1962] 3p.
Order from K-H $3.75 K-H 8973-c

Trans. of Suvrem[enna] Med[itsinai (Bulgaria) 1958, v. 9, no. 3, p. 88-90.

DESCRIPTORS: *Tobacco, Therapy, Drugs, *Deficiency diseases.

Wiedermann, G. and Muhar, F.
CLINICAL AND FUNCTIONAL INVESTIGATION OF VILAN, A NEW ANALGESIC OF THE MORPHINE SERIES. [1962] 6p. 7 refs.
Order from SLA $1.10 62-18046

Trans. of Wien[er] Z[ei]tschr[ift für] inn[ere] Med[izin und ihre Grenzgebiete] (Austria) 1959, v. 40, p. 135[-138].

DESCRIPTORS: Drugs, *Morphine, *Analgesics, *Narcotics, Pharmacology, Respiration, Toxicity, *Nicotinic acid, Esters.

The dinicotinic acid ester of morphine marketed as Vilan, was tested in a number of patients. Effect and side effects of the product are discussed. The advantage of the new product as compared to morphine, is the good analgesic action with only slight side effects. Through esterification of nicotinic acid, an additional spasmolytic effect is obtained. The effect of Vilan on the function of the lungs was tested spirographically and with blood gas analysis. Results show that Vilan has no acidosic effect. The opposite is true, since in cases of chronic bronchial stenosis affecting the whole body, the spasmolytic action of the drug causes improvement in the metabolism of the entire organism. This morphine derivative can therefore also be used in primary pulmonary insufficiency and in Cor pulmonale. In the course of treatment with Vilan the occurence of euphoria could never be observed with certainty. More extended observations will of course be necessary to clarify the question of addictive danger. (Author)

Zmorski, T.
RESERPINE (SERPASIL) IN THE TREATMENT OF HUNTINGTON'S CHOREA (La Reserpine (Serpasil) dans le Traitement de la Choree de Huntington). [1962] 9p. 32 refs.
Order from SLA $1.10 62-18052

Trans. of Psychiatria et Neurol[ogia] (Switzerland) 1959, v. 137, p. 40-48.

DESCRIPTORS: *Reserpine, Drugs, *Tranquilizing drugs, Diseases, Nervous system.

The results are described that were obtained with reserpine in two cases of Huntington's chorea. The patients were given increasing doses of reserpine (Serpasil) in the form of tablets and injections. Treatment was initiated with tablets, injections being given as well from the fifth day onwards. The dosage was increased by 1 mg. daily. In the first case, hyperkinesia disappeared on the 10th day of treatment,

when the dose had reached 12 mg. daily. In the second case, the full therapeutic effect was not attained until the 18th day, by which time the dose was 14 mg. daily The dosage of Serpasil was subsequently gradually reduced to an optimum level, i. e. one at which the dose was still sufficient to prevent the reappearance of hyperkinesia. This dose was adhered to as maintenance therapy. Both the maximum and the optimum dosage should be individualised. In the two cases referred to, the optimum dosage amounted to 2 and 7 mg. daily, respectively. No serious complications occurred during the treatment. Neither the blood pressure nor the body temperature under-went any appreciable change. The pulse rate diminished slightly. The treatment had no influence on the intellectual dementia accompanying the disease. By acting on the subcortical centres, reserpine effectively combats extrapyramidal hyperkinesia in cases of Huntington's chorea. Although the drug is not highly toxic, treatment calls for careful individualisation of dosage.

Zsupan, K.
SPECTROPHOTOMETRIC MULTICOMPONENT ANALYSIS AND ITS APPLICATION IN THE PRODUCTION OF OXYTETRACYCLINE (Spektrophotometrische Mehrkomponentenanalyse und Ihre Anwendung in der Oxytetracyclinerzeugung). [1962] [17]p. 9 refs.
Order from SLA $1.60 62-16296

Trans. of Acta Chim[ica] (Hungary) 1961, v. 27 [no. 1/4] p. 451-461.

DESCRIPTORS: Drugs, *Antibiotics, *Terramycin, Production, Fermentation, *Ultraviolet spectroscopy, Spectrophotometers.

The ultraviolet spectrophotometric procedure can be applied with good results in the analysis of oxytetracycline and its accompanying substances (apo-Terramycin, epi-Terramycin, Rimocidin). With the aid of this method, oxytetracycline, Rimocidin and apo-Terramycin can be determined in one and the same solution. Moreover, the method also permits determination of chlortetracycline or epi-Terramycin whenever they are the only substances accompanying the oxytetracycline. The analysis can be carried out on all intermediate products of the manufacturing process without any purification - after being dissolved in suitable solvents, solvents, filtered and diluted. An exception to this is the fermentation liquor, which can be analyzed with this method only for oxytetracycline and Rimocidin. (Author)

Radiobiology

MEDICAL RADIOLOGY, 1962, VOL. 7, NO. 5: SELECTED ARTICLES. 17 Aug 62 [22]p. 27 refs. JPRS: 14883.
Order from OTS or SLA $2.60 62-32455

Trans. of Meditsinskaya Radiologiya (USSR) 1962, v. 7, no. 5, p. 31-37, 49-53, 91-93.

DESCRIPTORS: Radiobiology, Radiation sickness, *Reproductive system, *Radiation effects, *Transplantation, *Bone marrow, Bone, Injuries, Conferences, *Immunology, Microbiology.

Contents:
Disturbances in the reproductive system of monkeys at remote periods following acute sickness, by L. A. Yakovleva and M. I. Novikova
The effect of homotransplantation of fresh bone marrow on radiation sickness complicated by simple bone fractures, by G. G. Chemyanov
Interinstitute Conference on Problems of Radiation Immunology and Microbiology (no. 3) 12-16 Jan 62, by D. R. Kaulen.

Savenko, I. A., Pisarenko, N. F., and Shavrin, P. I.
SPACE FLIGHTS AND THE RADIATION DANGER. 6 June 62 [17]p. FTD-TT-62-450.
Order from OTS or SLA $1.60 62-25845

Unedited rough draft trans. of Priroda (USSR) 1962 [v. 51] no. 2, p. 40-48.

DESCRIPTORS: *Space flight, *Radiation hazards, Cosmic rays, *Dosage, Van Allen radiation belt, Space probes, Satellites.

Shapiro, F. B.
FERTILITY OF MALE MICE EXPOSED TO GAMMA RADIATION DURING EMBRYONIC GROWTH AND THE VIABILITY OF THEIR OFFSPRING. 14 Aug 62 [16]p. 9 refs. JPRS: 14833.
Order from OTS or SLA $1.60 62-32459

Trans. of Nauchnye Doklady Vysshei Shkoly. Biologicheskie Nauki (USSR) 1962, no. 2, p. 104-108.

DESCRIPTORS: *Fertility, Mice, Gamma rays, *Radiation effect, *Embryos, Growth, *Viability.

A gamma irradiation of male mice with a dose of 50 r during the period of embryonic growth resulted in a serious disturbance of fertility. This disturbance manifests itself both in a complete sterility and in a lowering of reproductive ability and in a smaller size of litters. Males irradiated during the period of embryonic growth also differ from control animals in a poorer capacity for cross-breeding, while their offspring is characterized by a poorer viability and a lower weight in comparison to baby mice of the same age from control litters. All of these disturbances were observed in males irradiated on the 12th and 16th day of embryonic growth, and approximately in the same degree. Only in regard to the sterility indicator did irradiation on the 16th day prove to be more effective.

Shtern, L. S., Rapoport, S. Ya., and Gromakovskaya, M. M.
FUNCTION OF THE NERVOUS SYSTEM IN THE CHANGE IN PERMEABILITY OF THE HISTOCHEMATIC BARRIERS UNDER CONDITIONS OF RADIATION [Rol' Nervnoi Sistemy v Izmenenii Pronitsaemosti Gisto-Gematicheskikh Bar'erov pri Obluchenii]. [1962] [9]p. 15 refs.
Order from OTS or SLA $1.10 62-14687

Trans. of A[kademiya] N[auk] SSSR. D[oklady] 1959, v. 126, no. 3, p. 699-702.

DESCRIPTORS: Nervous system, Physiology, *Radiation effects, *Permeability, *Tissues (Biology), *Autonomic nervous system.

Surgery

SUMMARY OF THE WORK OF THE EDITORIAL BOARD OF THE JOURNAL "HERALD OF SURGERY IMENI I. I. GREKOV" DURING 1961 AND PLANS FOR 1962. 13 Apr 62 [6]p. JPRS: 13468.
Order from OTS or SLA $1.10 62-24006

Trans. of Vestnik Khirurgii (USSR) 1962, v. 88, no. 1, p. 3-6.

DESCRIPTORS: *Surgery, *Literature,

Bangerter, A.
OPERATIVE TECHNIQUE FOR CLOSURE OF RETINAL PORES (HOLES) AT THE POSTERIOR POLE OF THE EYE WITH SPECIAL EMPHASIS ON HOLES IN THE MACULA (Operationsmethode zum Verschluss von Netzhautlöchern am Hinteren Augenpol, im Besonderen von Maculalöchern). [1962] 4p.
Order from SLA $1.10 62-10860

Trans. of Ophthalmologica (Switzerland) 1940, v. 100, p. 351-354.

DESCRIPTORS: *Surgery, Eye, Pathology, *Retina, *Ophthalmology.

Ichikawa, Hiroyuki.
THE EFFECT OF OPEN HEART SURGERY UNDER HYPOTHERMIA AND EXTRACORPOREAL CIRCULATION WITH OXYGENATOR ON THE BLOOD PLASMA LEVEL OF 17-HYDROXYCORTICOSTEROID AND ON THE URINARY EXCRETION OF 17-KETOSTEROID. [1962] [27]p. 26 refs.
Order from SLA $2.60 62-18080

Trans. of [Kyobu Geka] (Japan) 1961, v. 14, Sep, p. 746-754.

DESCRIPTORS: *Surgery, *Heart, *Hypothermia, Artificial heart, *Corticosteroids, *Steroids, Blood plasma, Excretion.

The measurement of preoperative adrenalcortical function and the plasma 17-OHCS level, urine 17-KS and the eosinophil count was carried out in cases of open cardiac surgery under hypothermia with extracorporeal circulation. The average value of the plasma 17-OHCS increased before extracorporeal circulation, although individual change was not similar. The elevation of 17-OHCS in the blood is observed after extracorporeal circulation was started. The level was highest at 6 hours postoperatively, and returned to the previous level on the 5th to 10th p.o. (post operative) day. The urine 17-KS level does not show any change on the day of operation and mostly showed the maximum value on the 1st and 2nd p.o. day. On the 7th to 10th p.o. day the value returns to the preop. value. In most cases, the eosinophils disappear at 6 hours after operation, and even on the 5th p.o. day the recovery is still not complete. On the 10th p.o. day the recovery was almost complete. The changes in blood 17-OHCS, urine 17-KS, and eosinophil counts were discussed. (Author)

Novikov, A. N., Belkin, V. R. and others.
THE TECHNIQUE OF USING THE UKE-60 APPARATUS IN LUNG RESECTION FOR CARCINOMA [AND] EXPERIENCE IN THE UTILIZATION OF MECHANICAL SUTURE IN SURGERY OF THE ESOPHAGUS AND CARDIA OF THE STOMACH. 17 Aug 62 [25]p. 15 refs. JPRS: 14884.
Order from OTS or SLA $2.60 62-32447

Trans. of Grudnaya Khirurgiya (USSR) 1962 [v. 4] no. 3, p. 13-17 and 40-47.

DESCRIPTORS: *Medical equipment, *Surgery, Lungs Excision, Cancer, Esophagus, Stomach, *Clamps, *Tantalum

CHEMISTRY

A. P. TERENT'EV: ON HIS 70TH BIRTHDAY. 9 May 62 [5]p.
Order from OTS or SLA $1.10 62-18030

Trans. of #Zhur[nal] Anal[iticheskoi] Khim[ii] (USSR) 1961, v. 16 [no. 6] p. 747-748.

DESCRIPTORS: *Chemists, Scientific personnel, Chemistry, Organic compounds, Chemical reactions, Chemical analysis.

CHEMISTRY, CHEMICALS, AND CHEMICAL PRODUCTS, NO. 19. Series 2 of English Abstracts of Selected Articles from Soviet Bloc and Mainland China Technical Journals. Aug 62, 60p.
Order from OTS $25.00/year 61-11141-19
foreign $32.00/year

DESCRIPTORS: *Chemistry, *Chemical engineering, *Chemical industry, *Abstracts, China.

Consists of abstracts in English.

[TRANSACTIONS (REPORTS) OF THE ACADEMY OF SCIENCES OF THE USSR] 1945, VOL. 47, NO. 8: [TABLE OF CONTENTS AND SELECTED ABSTRACTS]. [1962] 2p.
Order from OTS or SLA $1.10 62-10789

Abstract trans. of [Akademiya Nauk SSSR]. Comptes Rendus (Doklady) de l'Academie des Sciences de l'U. R. S. S., 1945, v. 47, no. 8, p. 550-553 and 571-573.

DESCRIPTORS: Abstracting, Light, Scattering, Solutions, *Polymers, *Rubber, Algae, *Dolomite, *Paleoecology.

Contents:
Depolarization of light scattered by solutions of rubber-like polymers, by V. Tsvetkov and E. Frisman
Certain forms of occurrence of algae dolomites of the middle cambrian in the Trans-Angara Region, by E. A. Nechaeva.

Chlebovsky, T.
BIOGRAPHIC INFORMATION ON PROF. RNDR. RUDOLF JIRKOVSKY. 3 Aug 62 [10]p. JPRS: 14729.
Order from OTS or SLA $1.10 62-32212

Trans. of Chemicke Listy (Czechoslovakia) 1962, v. 56, no. 5, p. 574-576.

DESCRIPTORS: *Scientific personnel, *Chemistry.

Grubitsch, H., Geymeyer, W, and Buvik, E.
ANODIC OXIDE FILMS WITH CONTROLLED PORE SIZE. [1962] 7p. (17 figs. 6 tables 22 refs. omitted)
Order from SLA $1.10 62-18018

Trans. of Aluminium (Germany) 1961, v. 37, no. 9, p. 569-575.

DESCRIPTORS: *Electron microscopy, *Porous filters, *Aluminum compounds, Oxides, Films, Stabilization, Organic solvents, Anodes.

The purpose of the present investigation was to establish whether detached eloxal films, which have formed under suitable conditions, could be used as a filter material for a direct electron-microscope radiation, or, how uniformly the pores are developed in this film. (Author)

Hegedus, Andreas J. and Kurthy, Judith.
SEVERAL ALUMINUM OXIDES OF THE FOLLOWING TYPES: X-RAY AMORPHOUS ALUMINUM OXIDE CONSISTING OF SMALL PELLETS; BLACK SEMI-CONDUCTING ALUMINUM OXIDE; [AND] HIGH PURITY ALUMINUM OXIDE. Preliminary Rept. [1962] 6p. (1 fig. omitted) 21 refs.
Order from SLA $1.10 62-14451

Trans. of Journal für Praktische Chemie (East Germany) 1961 [ser. 4] v. 14, no. 3, p. 113-[118].

DESCRIPTORS: *Aluminum compounds, *Oxides, Pellets, X-rays, Spectrographic analysis, Pyrolysis, Combustion, Purification, Conductivity.

By burning aluminum ethylate an aluminum oxide, which is very proponderantly X-ray amorphous and which consists of small pellets, can be obtained in any quantity. When aluminum ethylate which had either been partly or completely thermally decomposed was ignited to 1600°C in a hydrogen atmosphere, a dark gray, partly black aluminum oxide was prepared. The relation between the oxygen deficit, that is, the n-semiconductivity, and the degree of contamination in this preparation, has not yet been examined. Through fractional vacuum distillation of the aluminum ethylate and its subsequent combustion or thermal decomposition, an aluminum oxide of spectral purity can be obtained, apart from a minimum silicon and magnesium content. (Author)

Kral, R.
GEOCHEMIE DES QUECKSILBERS. (The Geochemistry of Mercury). (text in German).
Order from T. I. B. $1.40

Trans. of Časopis Chemicky (Czechoslovakia) 1957, v. 9, p. 524-528[sic].

DESCRIPTORS: *Geochemistry, Mercury.

Lazarev, V. B., Zakharkin, L. I. and others.
THE SURFACE TENSION OF METALLIC CESIUM [AND] ADDITION OF DIBORANE TO ISOPRENE AND SYNTHESIS OF β-METHYLTETRAMETHYLENEDIBORIC ACID. 5 June 62 [11]p. 16 refs. FTD-TT-62-627
Order from OTS or SLA $1.60 62-32418

Unedited rough draft trans of #Akademiya Nauk SSSR. Otdelenie Khimicheskikh Nauk. Izvestiya, 1962, no. 2, p. 358-359 and 362-363.

DESCRIPTORS: *Cesium, Surface tension, *Diboranes, Methyl radicals, Methanes, *Boric acids, *Pentadienes, Synthesis, Isoprene.

The surface tension of cesium was measured by the method of maximum pressure in a gas bubble over a temperature range from 62° to 152° C. (Lazarev) The addition of diborane to isoprene yields bis-1, 4-(1-bora-2-methylcyclopentyl)-2-methylbutane, from which, by the action of boron trichloride, and then water, β-methyltetramethylenediboric acid is synthesized. (Zakharkin et al.)

Analytical Chemistry

Buchachenko, A. L. and Neiman, M. B.
SEPARATION OF FREE RADICALS BY THE METHOD OF PAPER-CHROMATOGRAPHY. [1962] 4p. 7 refs.
Order from OTS or SLA $1.10 62-16570

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1961, v. 139 [no. 4] p. 916-918.

DESCRIPTORS: *Free radicals, Separation, *Paper chromatography, Spectographic analysis.

Burglen, L. and Longuet, P.
RAPID SEPARATION AND COMPLEXOMETRIC DETERMINATION OF ALUMINUM. [1962] [12]p. 8 refs.
Order from SLA $1.60 62-16841

Trans. of Revue [des] Materiaux de Construction [et de Travaux Publics]. Edition C (France) 1960, no. 543, p. 327-331.

DESCRIPTORS: *Aluminum, Separation, Determination.

A simple method for separating Al^{+++} is proposed. With excess sodium hydroxide and carbonate Al^{+++} becomes soluble aluminate, most other ions forming insoluble hydroxides or carbonates. Addition of an excess of potassium and calcium ions makes the separation practically quantitative. The aluminate solution obtained is easily adapted to the determination of aluminum by complexometry using hematoxylin as the indicator. (Author)

Endo, Yoshihide and Takagi, Hajime.
CONTINUOUS DETERMINATION OF Fe (III) AND Al (III) IN Cr ORE WITH .8-QUINOL AND CYCLOHEXANEDIAMINETETRACETIC ACID. [1962] [17]p. (foreign text included) 5 refs.
Order from SLA $1.60 62-14858

Trans. of Bunseki Kagaku (Japan) 1959, v. 8 [no. 8] p. 491-495.

DESCRIPTORS: *Chromium, *Ores, *Iron, *Aluminum, Determination, Quinolinol, Ethylenedinitrilo tetracetates, Chemical indicators, Quantitative analysis.

Fe (III) and Al (III) from Cr-brick or Cr-ore were precipitated with oxine after masking Cr (III), Ca (II), Mn (II), and Mg (II) with EDTA. Fe (III) was titrated with EDTA using oxine (produced from oxinate decomposition) as indicator. After Fe (III) determination, Al (III) was titrated with Cy DTA using Cu (II)-PAN as indicator. In one continuous operation, Fe (III) in Cr-brick or Cr-ore can be separated using oxine, and a quantitative analysis can be performed rapidly and accurately. (Author)

Fedoseev, P. N. and Pavlenko, M. M.
THE DETERMINATION OF CARBON AND HYDROGEN IN ORGANIC COMPOUNDS CONTAINING SULFUR AND NITROGEN IN THE PRESENCE OF CATALYSTS, PT. II. 11 June 62 [8]p. 5 refs.
Order from OTS or SLA $1.10 62-18021

Trans. of #Zhur[nal] Anal[iticheskoi] Khim[ii] (USSR) 1953, v. 8 [no. 3] p. 158-162.

DESCRIPTORS: *Carbon, *Hydrogen, Detection (Chemical), Organic compounds, *Sulfur, *Nitrogen, Halogens, Catalysts, *Fuels.

A method of analysis is described for organic compounds containing sulfur and halogen in addition to carbon, hydrogen, oxygen, and nitrogen. A 10-cm layer of metallic silver (weight approximately 6 to 7g) in a 10 to 12 mm diameter tube completely absorbs sulfur oxides and halogen on heating to 650 to 750°. The silver may be replaced by lead chromate, but the length of the layer must then be increased to 20 cm. The method can be used very successfully to analyze coal, petroleum, petroleum residue, oil, and other technical materials.

Fischer, Joseph and Kropp, Rudolf.
FLAME SPECTROMETRY AS A PROCESS IN MODERN CHEMICAL ANALYSIS. 13 Dec 60 [16]p. (8 figs. omitted) 11 refs.
Order from SLA $1.60 62-14234

Trans. of Glastechn[ische] Ber[ichte] (West Germany) 1960, v. 33, no. 10, p. 380-387.

DESCRIPTORS: *Chemical analysis, *Flames, Alkali earths, Chemical elements, Ionization, Spectrographic data.

Karrer, P., Helfenstein, A., and Widmer, Rose.
PLANT DYES. IX. IDENTIFICATION OF CROCETIN AND LYCOPENE. [1962] 15p.
Order from K-H $18.75 K-H 5179-b

Trans. of Helvetica Chimica Acta (Switzerland) 1928, v. 11, p. 1201-1209.

DESCRIPTORS: *Plants, *Dyes, *Carotenoids, Identification.

Kraft, D.
THE SEPARATION OF ALKALOIDS BY PAPER CHROMATOGRAPHY. [1962] 16p.
Order from K-H $20.00 K-H 3138-c

Trans. of die Pharmazie (Germany) 1953, v. 8, p. 251ff.

DESCRIPTORS: *Alkaloids, Separation, *Paper chromatography.

Näsänen, Reino.
THE POTENTIOMETRIC DETERMINATION OF THE SOLUBILITY PRODUCT OF MAGNESIUM HYDROXIDE. [1962] 14p. 23 refs.
Order from SLA $1.60 62-18009

Trans. of Zeit[schrift für] Phys[ikalische] Chem[ie, Leipzig] (Germany) 1941, v. 188A, p. 272-283.

DESCRIPTORS: *Magnesium compounds, *Hydroxides, Determination, Electrolytic titration, Solubility, Mathematical analysis.

General equations are deduced which are needed for the determination of the solubility product from the maximum change of potential and adapted for the special case of magnesium hydroxide. The concentration solubility product of magnesium hydroxide is determined at different contents of KCl. The thermodynamic solubility product as calculated according to the theory of Debye-Hückel from the measured values is 3.07×10^{-11}. The theoretically expected difference between the point of equivalency and the point of

inflection of the curve is confirmed experimentally in the case of the alkalimetric titration of magnesium. (Author)

Nebel, Dieter.
THE ANALYTICAL CHEMISTRY OF PLUTONIUM. 29 Dec 61 [21]p. JPRS: 11689.
Original copy poor quality; available on loan from OTS or SLA 62-24533

Trans. of Chemische Technik (East Germany) 1961, v. 13, no. 9, p. 522-529.

DESCRIPTORS: *Plutonium, Chemical properties, Chemical analysis, Separation, Ion exchange, Precipitation, Spectographic analysis, Electrochemistry, Potentiometers, Polarographic analysis, Radiography.

Nowicka, T.
DETERMINATION IN URANYL NITRATE AND IN HYDROGEN PEROXIDE SOLUTIONS. Pt. 1 of the Spectrophotometric Determination of Boron in Reactor Material. [1962] [12]p. (3 figs. 2 tables omitted) 17 refs.
Order from SLA $1.60 62-14021
Original copy poor quality; available on loan also

Trans. of article from unidentified source, n.d.

DESCRIPTORS: *Hydrogen compounds, *Peroxides, Solutions, *Uranyl radicals, *Nitrates, *Boron, Determination, Spectrophotometers.

Boron is one of the most undesirable impurities found in reactor materials. In order to determine the degree of purity of the uranyl nitrate and of hydrogen peroxide, it was necessary to create a method which would permit the determination of 0.1 to 0.5 part of boron per million with an accuracy of 20%. (Author)

Ollero Gomez, A. and Paneque Guerrero, A.
DETERMINATION OF CATALASE IN TOBACCOS. [1962] 21p.
Order from K-H $26.25 K-H 5258-b

Trans. of Sociedad Espanola de Fisica y Quimica. Anales (Spain) 1956, v. 52B [no. 1] p. 51-62.

DESCRIPTORS: *Quantitative analysis, *Catalase, *Tobacco, Smokes, Nicotine, Cigarettes.

Shchukarev, S. A. and Andreev, S. N.
STUDY OF THE POSSIBILITY OF COLORIMETRIC ANALYSES IN THE ULTRAVIOLET RANGE OF THE SPECTRUM. [1962] 20p. (4 figs. omitted) 46 refs.
Order from OTS or SLA $1.60 62-16638

Trans. of #Z[hurnal] Analitich[eskoi] Khim[ii] (USSR) 1953, v. 8, no. 1, p. 22-32.

DESCRIPTORS: Organic compounds, *Colorimetric analysis, *Ultraviolet spectroscopy, Absorption spectra

Light filters were made of borate glasses for the ultraviolet with the maxima transmission at 310, 315, 320, 330, 355 mμ. Crystalline filters were made which select narrow ranges of spectrum at 257, 260 and 270 mμ. On the example of the series of organic compounds the possibility was shown of the highly sensitive colorimetric analysis of substances according to their own absorption in the ultraviolet. The possibility was also shown of applying simplest chemical reactions for the colorimetry in the ultraviolet lights, which reactions proceed with the formation of the products which intensively absorb the ultraviolet radiation. (Author)

Staberg, Else-Marie.
TAR AND NICOTINE CONTENT OF CIGARETTE SMOKE. [1962].
Order from K-H K-H-11139

Trans. of Nordisk Hygienisk Tidskrift (Sweden) 1959, v. 40, p. 71-88.

DESCRIPTORS: *Tar, *Nicotine, Tobacco, *Smokes, *Cigarettes.

Synek, L. and Vecera, M.
QUANTITATIVE ORGANIC ANALYSIS. XI. THE USE OF COBALTO-COBALTIC OXIDE (Co_3O_4) AS A COMBUSTION CATALYST IN ELEMENTAL ANALYSIS. Preliminary Communication. 8 June 62 [5]p. 10 refs.
Order from SLA $1.10 62-18034

Trans. of [Sbornik Chekhoslovatskykh Khimicheskykh Rabot] 1958, v. 23, p. 331-333.

DESCRIPTORS: *Organic compounds, *Quantitative analysis, *Cobalt compounds, Oxides, *Cobalt, *Cobalt catalysts, Combustion, Catalysts.

A small layer of cobalto-cobaltic oxide on a suitable support is a very effective combustion catalyst, and, at temperature of about 600°C, ensures complete combustion for most organic compounds, even those whose combustion involves difficulties (hydrazones, naphthalene, cholesteryl benzoate, or compounds with long carbon chains). The activity of the catalyst is practically unchanged in the combustion of compounds containing halogens or sulfur, so that one filling can be used for four months, with daily operation. Nitrogen oxides are retained with MnO_2. (See also 60-14381)

Takimoto, Masayoshi.
INVESTIGATION OF THE SEPARATION AND DETERMINATION OF COMPOUNDS WHICH FORM BY MELAMINE-FORMING REACTION AND BY HYDROLYSIS OF THEIR HEAT-CONDENSATES (CYANOMELAMINE,* GUANYLMELAMINE, CYAMELURIC ACID, ETC.). Rept. no. 10 of Studies on Separation [and] Determination Methods for Cyanamide Derivatives. [1962] 15p. 13 refs.
Order from SLA $1.60 62-10685

Trans. of Kogyo Kagaku Zasshi (Japan) 1961, v. 64, no. 8, p. 1456-1460.

DESCRIPTORS: *Cyanamides, *Melamine, Separation Determination, Hydrolysis, Ion exchange resins, Ultraviolet spectroscopy, Absorption spectra, Chromatographic analysis.

Terent'ev, A. P., Luskina, B. M., and Syavtsillo, S. V.
THE ANALYSIS OF USED SILICON-COPPER ALLOYS. 18 May 62 [6]p. 3 refs.
Order from OTS or SLA $1.10 62-18028

Trans. of #Zavodskaya Lab[oratoriya] (USSR) 1959, v. 25 [no. 3] p. 288-289.

DESCRIPTORS: *Silicon alloys, *Copper alloys, *Iron alloys, Carbon, Chlorine, Oxidation, Chemical analysis.

This paper describes the determination of C, Cl, Si, Cu, and Fe in a single sample of spent alloy by the "wet combustion" method. (Author)

Terent'ev, A. P. and Luskina, B. M.
DETERMINATION OF NITROGEN IN PYRIDINE COMPOUNDS. Pt. 5 of Elemental Organic Analysis by the "Wet Combustion" Method. 28 May 62 [9]p. 12 refs.
Order from OTS or SLA $1.10 62-18026

Trans. of #Zhur[nal] Anal[iticheskoi] Khim[ii] (USSR) 1962, v. 17 [no. 2] p. 227-230.

DESCRIPTORS: *Nitrogen, Detection (Chemical), *Pyridines, Chemical analysis, Chemical elements, Oxidation.

A method for the determination of nitrogen in pyridine compounds is proposed, based on their oxidation with a mixture of potassium persulfate and chromic acid in sulfuric acid medium in the presence of copper sulfate and selenium dioxide at 170-180°. The determination takes one hour; the accuracy is ±0.3% (absolute). Chlorine does not interfere with the determination. (Author)

Terent'ev, A. P., Obtemperanskaya, S. I., and Likhosherstova, V. N.
THE MICRODETERMINATION OF COPPER IN ORGANIC COMPOUNDS BY COMBUSTION IN OXYGEN. 22 May 62 [4]p. 3 refs.
Order from OTS or SLA $1.10 62-18027

Trans. of #Zhur[nal] Anal[iticheskoi] Khim[ii] (USSR) 1960, v. 15 [no. 6] p. 748-749.

DESCRIPTORS: *Copper, Detection (Chemical), Microchemistry, Oxygen, Combustion, Titration.

A rapid method for determining copper in organic compounds has been developed, based on combustion in an oxygen-filled flask, followed by iodometric titration of the copper. The error is ± 0.2%. (Author)

Terent'ev, A. P., Fedoseev, P. N., and Ivashova, N. P.
THE USE OF CALCIUM FOR DECOMPOSING THE SAMPLE. Pt. 4 of New Methods for the Quantitative Determination of Nitrogen, Sulfur, and Halogen in one Sample of an Organic Compound. 4 June 62 [11]p. 3 refs.
Order from OTS or SLA $1.60 62-18023

Trans. of #Zhur[nal] Anal[iticheskoi] Khim[ii] (USSR) 1958, v. 13 [no. 3] p. 344-348.
Another trans. is available from CB $7.50

DESCRIPTORS: *Nitrogen, *Sulfur, *Halogens, Detection (Chemical), Organic compounds, *Calcium

A method is described for the quantitative determination of nitrogen, sulfur, and halogen in organic compounds by heating then with powdered calcium. The principle of the method consists in heating a sample of the organic compound under analysis, containing nitrogen, sulfur, and halogen, with powdered calcium at 700-750° in an atmosphere of ether vapor or hydrogen. Calcium nitride, sulfide, and halide are formed, in which nitrogen, sulfur, and halogen are determined quantitatively. The method makes possible the quantitative determination of one, two, or three of the above elements in a single sample of an organic compound. The use of calcium speeds up and simplifies the analysis and prevents the formation of explosive mixtures.

Toth, Julius.
FURTHER INVESTIGATIONS OF THE AMOUNT OF FREE AND BOUND NICOTINE IN HUNGARIAN CSERBL TOBACCOS. [1962] 3p.
Order from K-H $3.75 K-H 3923 f

Trans. of article from an unidentified source, n. d.

DESCRIPTORS: *Nicotine, Smokes, *Tobacco, Cigarettes, *Quantitative analysis, Hungary.

Turkdogan, Agah.
DENSITY AND CUBIC WEIGHT OF TOBACCO. [1962] 11p.
Order from K-H $13.75 K-H 5140

Trans. of article from an unidentified source, n. d.

DESCRIPTORS: *Tobacco, Density, *Physical properties.

Vydra, Frantisek and Celikovsky, Jaroslav.
SPECTROPHOTOMETRIC DETERMINATION OF GOLD IN THE ULTRA-VIOLET BAND. [1962] 4p. (3 figs. omitted) 3 refs.
Order from SLA $1.10 62-16710

Trans. of Chemicke Listy (Czechoslovakia) 1957, v. 51, p. 768-[770].

DESCRIPTORS: *Ultraviolet spectrophotometers, *Gold, Halides, Bromides, *Colorimetric analysis.

The described method makes possible a direct and simple determination of gold in solutions with a concentration of 0.5 to 30 g Au in 1 ml with a satisfactory degree of precision. We have employed it successfully for the determination of gold in annydrous chloroform solutions of aurochloride. In conjunction with $AuBr_4^-$ extraction, for example from a mixture with some metals this method would be apt to find wider application. (Author)

Inorganic Chemistry

Feher, F. and Rempe, G.
PREPARATION OF HIGHER BROMOSULFANES S_xBr_2. Pt. 23 of Contribution to the Chemistry of Sulfurs. [1962] 1p.
Order from SLA $1.10 62-16644

Abstract trans. of Z[eitschrift für] Anorg[anische] Chem[ie] (East Germany) 1955, v. 281, no. 1/2, p. 161-168.

DESCRIPTORS: *Hydrogen compounds, Sulfur, *Sulfur compounds, *Bromides, Synthesis.

Feher, F., Laue, W., and Kraemer, J.
REACTION BETWEEN SULFANES H_2S_n AND CHLOROSULFANES S_mCl_2. Pt. 22 of Contribution to the Chemistry of Sulfurs. [1962] 1p.
Order from SLA $1.10 62-16643

Abstract trans. of Z[eitschrift für] Anorg[anische] Chem[ie] (East Germany) 1955, v. 281, no. 1/2, p. 151-160.

DESCRIPTORS: Condensation reactions, *Hydrogen compounds, Sulfur, *Sulfur compounds, *Chlorides, Hydrochloric acid, Acid, Separation.

Gel'man, A. D., Moskvin, A. I. and others.
THE COMPLEX COMPOUNDS OF TRANSURANIUM ELEMENT. 30 Mar 62 [214]p. 108 refs.
FTD-TT-61-246; AD-274 119.
Order from OTS or SLA $14.50 62-24265

Unedited rough draft trans. of mono. Kompleksnye Soedineniya Transuranovykh Elementov, Moscow, 1961, 223p.

DESCRIPTORS: *Complex compounds, *Transuranic elements, Chemical properties, Separation, Precipitation, *Neptunium compounds, *Plutonium compounds, Americum compounds, Curium, Berkelium, California, Einsteinium, Fermium, Mendelevium, Bibliography.

Contents:
Complexation of neptunium in aqueous solutions
Plutonium complexation in aqueous solutions
The synthesis and properties of certain complex compounds of tri-, tetra-, and hexavalent plutonium'
The complexation of transplutonium elements in solutions
The use of complex compounds to isolate and separate trans-uranium elements

Kozmanov, Yu. D. and Ugol'nikova, T. A.
ON IRON MOLYBDATES (O Molibdatakh Zheleza). [1962] 2p. 4 refs.
Order from OTS or SLA $1.10 62-10644

Trans. of Zh[urnal] Neorg[anicheskoi] Khim[ii] (USSR) 1958, v. 3 [no. 5] p. 1267.

DESCRIPTORS: *Iron compounds, *Molybdenum compounds, Oxides, *Molybdates, Phase studies, Sintering, *Cobalt alloys, *Nickel alloys, High temperature research.

The reaction between the solid phases of ferrous oxide and molybdenum oxide was investigated by X-ray analysis. Three ferromolybdates were produced: (1) α-phase, $FeMoO_4$, (2) β-phase, Fe_2MoO_4, and (3) γ-phase, $Fe_2(MoO_4)_3$. The α-phase is obtained by sintering FeO and MoO_3 in a vacuum and in an argon atmosphere at 700°C. This phase is isomorphic with $NiMoO_4$. A radiogram of $FeMoO_4$ was also carried out. The β-phase is obtained by sintering FeO and MoO_2 in the ratio 2:1 in argon at 350°C. This phase is ferromagnetic. The γ-phase is produced by sintering Fe_2O_3 and MoO_3 in air at temperatures above 700°C. This phase melts at 940°C. The α- and β-phases oxidize in air at higher temperatures by forming Fe_2O_3 and MoO_3. The α-phase alloys with cobalt and nickel, but it does not oxidize even at 1000°C. A new phase, the composition of which was not determined, was radiographically found by sintering FeO and MoO_2 at 700° to 800°C in argon.

Nesterova, Ya. M., Pashinkin, A. S., and Novoselova, A. V.
DETERMINATION OF THE SATURATED VAPOR PRESSURE OF A SOLID SELENIDE AND TELLURIDE OF TIN. [1962] 13p. 29 refs.
Order from OTS or SLA $1.60 62-14069

Trans. of #Zh[urnal] Neorgan[icheskoi] Khim[ii] (USSR) 1961, v. 6, no. 9, p. 2014-2018.

DESCRIPTORS: *Vapor pressure, Solids, *Selenides, *Tellurides, *Thin compounds, Crystallization, Lattices.

Saturated vapor pressure of tin selenide and telluride was measured. It was found that tin selenide crystallizes in a rhombic lattice with identity periods: $a = 4.46 \pm 0.01$; $b = 4.17 \pm 0.01$; $c = 11.46 \pm 0.01$ kX. (Author)

Noll, W.
RECENT INVESTIGATION OF REACTIONS IN HYDROUS SILICATE SYSTEMS (Neuere Untersuchungen von Reaktionen in Wasserhaltigen Silicat-Systemen). [1961] [27]p. (foreign text included) 20 refs.
Order from SLA $2.60 62-10446

Trans. of die Chemie (Germany) 1944, v. 57, no. 13/16, p. 90-94.

DESCRIPTORS: Water, *Silicates, Hydrates, Chemical reactions, Phase studies, *Aluminum compounds, *Silicon compounds, *Oxides, Reaction kinetics.

Schmeisser, M. and Schwarzmann, M.
SILICON-DIBROMIDE $(SiBr_2)_x$ AND ITS DERIVATIVES. [1962] 12p. 13 refs.
Order from SLA $1.60 62-16448

Trans. of Z[eitschrift für] Naturforsch[ung] (West Germany) 1956, v. 11b, no. 5, p. 278-282.

DESCRIPTORS: *Silicon compounds, *Bromides, Hydrolysis, Chlorination, Fluorination, Ammonia, Magnesium, Acetic acids, Chemical reactions, Hydrogenation, Grignard reactions.

It is possible to obtain a silicon subbromide of the composition $(SiBr)_x$ from $SiBr_4$ and magnesium in ether solution; at 1200°C. from $SiBr_4$ and elementary silicon, besides the already known Si_2Br_6, originates the unknown until now $(SiBr_2)_x$ as colophonium-like, solid substance well soluble in benzene and other organic solvents. It was possible to obtain it by several different reactions: by hydrolysis originates a sub-silicic acid capable for rearrangement; with ammonia form several ammonolyses products with the spreading of Si-Si-bond; by hydrogenation with $LiAlH_4$ originates, besides the high molecular polysilanes, up to 30% of $(SiH_2)_x$; Grignard compounds yield subalkyles of the composition $(SiR_2)_x$; with the water-free acetic acid, above the Si-subacetate form the Si-acetyl-compound with the grouping $Si\text{-}COCH_3$, whereby the acetic acid anhydride becomes cleaved and the rearrangement occurs. (Author)

Schmidt, Max.
ACIDS OF SULFUR. III. ANHYDROUS POLYTHIONIC ACIDS (SULFANE DISULFONIC ACIDS) $H_2S_3O_6$, $H_2S_4O_6$, $H_2S_5O_6$, $H_2S_6O_6$, AND $H_2S_7O_6$: PREPARATION OF SOLUTIONS AND SALTS OF OCTATHIONIC ACID, DECATHIONIC ACID AND DODECATHIONIC ACID. [1962] 29p. 3 refs.
Order from SLA $2.60 62-14449

Trans. of Z[eitschrift für] Anorg[anische] Chem[ie] (East Germany) 1957, v. 289 [no. 1/4] p. 175-192.

DESCRIPTORS: *Sulfur, Acids, *Sulfonic acids, *Thiols, Preparation, Sulfites, Iodine.

The discovery of the sulfane monosulfonic acids, $H_2S_xO_3$, disclosed two new methods which may be applied to the polythionic acids: (1) the sulfane monosulfonic acids react directly with SO_3 forming the anhydrous polythionic acids: $H_2S_{x-1}O_3 + SO_3 \rightarrow H_2S_xO_6$; and (2) in the oxidation of the sulfane monosulfonic acids with iodine: $2H_2S_xO_3 + I_2 \rightarrow H_2S_{2x}O_6 + 2IH$.

Ugai, Ya. A. and Gordin, V. L.
PREPARATION AND STUDY OF SOME PROPERTIES OF Hg_3Sb_2. 7 June 62 [6]p. 9 refs.
Order from OTS or SLA $1.10 62-18022

Trans. of #Zhur[nal] Neorg[anicheskoi] Khim[ii] (USSR) 1962, v. 7 [no. 3] p. 703-705.

DESCRIPTORS: *Mercury compounds, *Antimonides, Synthesis, Physical properties, Chemical properties, Hydrochloric acid, Antimony compounds, Chlorides, Mercury, Metallic compounds, Chemical reactions, Intermetallic compounds.

It was shown that Hg_3Sb_2 cannot be obtained directly by spraying the starting components in vacuum on to a mica support. Various methods for preparing SbH_3 were investigated. It was found that SbH_3 is best obtained by reaction of a HCl solution of $SbCl_3$ with metallic Mg. A new variant of the preparation of Hg_3Sb_2 by reaction of SbH_3 with $HgCl_2$ was described. Some chemical and physical properties of Hg_3Sb_2 were investigated for the first time. (Author)

Organic Chemistry

PROCESS FOR THE PURIFICATION OF POLYMERS, ESPECIALLY POLYOLEFINS' CONTAMINATED BY METALLIC COMPOUNDS. 26 Oct 61, 15p.
Order from OTS or SLA $1.60 62-14309

Trans. of French patent 1,254,587, internat. cl. B 01 j -C 09 f, by Shell Internationale Research Maatschappig N. V. (Netherlands) appl. filed 8 Feb 60, granted 16 Jan 61 (appl. Netherlands, 9 Feb 59, under 235,905 in the name of the Society: N. V. de Bataafsche Petroleum Maatschappij). (Bulletin Officiel de la Propriété Industrielle (France) 1961, no. 8).

DESCRIPTORS: *Polymers, *Ethylenes, *Purification, Metallic compounds, Catalysts, Impurities, Hydrochloric acid, Alcohol, Water, Chemical reactions.

The treatment of the polymer with hydrochloric acid, if desired, also with alcohol, and finally with water, is characterized in that the hydrochloric acid treatment is effected in the complete or almost complete absence of liquid water or a gaseous phase saturated with water vapor, while the possible alcohol treatment is effected before, during and/or after the treatment with hydrochloric acid.

PROCESS OF PURIFICATION FOR AROMATIC POLYCARBOXYLIC ACIDS. [1962] 13p.
Order from OTS or SLA $1.60 62-14807

Trans. of French patent 1,261,465, P. V. no. 828,346, internat. cl., by Standard Oil Co., U.S., reg. 27 May 60, granted 10 Apr 61 (U.S. appl. 816,400, 28 May 59, by Albert L. Hensley Jr. and Philip H. Towle; U.S. pat. appl. 817,073, 1 June 59, by Delbert H. Meyer and Aloysius J. Stryck) (Bulletin Officiel de la Propriété Industrielle (France) 1961, no. 20.

DESCRIPTORS: *Carboxylic acids, Purification, *Phthalic acid, Sodium compounds, Potassium compounds, Ammonium radicals, Permanganates, Hypochlorites

A process is proposed for the purification of a crude aromatic polycarboxylic acid containing at least 95% of a particular aromatic polycarboxylic acid and the remainder of which consists essentially of oxidation by-products containing organic coloring compounds. The process consists in the production of an aqueous

solution of an alkaline salt of that crude polycarboxylic aromatic acid, in which about 90 to 99.9% of the hydrogens in the carboxy groups of the acid are replaced by alkaline ions, the salt being present in a quantity amounting to 25 to 100% of the saturation state at a temperature above 20°C. This solution is passed through a bed of carbon or activated charcoal at a temperature above 20°C, and the aromatic polycarboxylic acid is recovered from the treated solution, or preferably the aqueous solution is submitted to a chemical oxidation prior to its passage through the bed of activated carbon.

Aleksandru, L. and Oprish, M.
KINETICS OF VINYL ACETATE POLYMERIZATION IN METHANOL, tr. by I. Gawronska. 26 Sep 61 [5]p. Courtaulds Misc. Lit. 3377; NLL M 3481.
Order from OTS or SLA $1.10 62-23952

Trans. of Vysokomolekulyarnye Soedineniya (USSR) 1961, v. 3, no. 2, p. 306-309.

DESCRIPTORS: *Vinyl radicals, *Acetates, *Polymerization, Reaction kinetics Primers, *Methanols.

The reaction kinetics of vinyl acetate polymerization in methanol have been investigated. The reaction rate constant k in the presence of various initiators has been determined. The chain transfer reaction constant c depending on the concentration of the solvent has been determined. (Author)

Benin, G. S.
OBTENCION DE ACIDO GLUTAMICO A PARTIR DEL ALCALI DE LOS SEPARADORES (Poluchenie Glyutaminovoi Kisloty iz Separatsionnogo Shcheloka) (Obtention of Glutamic Acid from Separator Alkali). 11p. CID: 62-42. (text in Spanish).
Order from OTS or ETC $1.05 62-26242

Trans. of Sakharnaya Promyshlennost' (USSR) 1957, v. 31, no. 2, p. 50-53.

DESCRIPTORS: *Glutamic Acid, Production, Alkali metals.

Chiusoli, G. P., Minisci, F., and Quilico, A.
C_{10} DIBASIC ACIDS DERIVED FROM DECALIN. Pt. 1 of Studies of the Oxidative Opening of Alicyclic Rings. [1962] 9p.
Order from ATS $14.40 ATS-72N561

Trans. of Gazz[etta] Chim[ica] Ital[iana] 1957, v. 87, p. 90-99.

DESCRIPTORS: *Dibasic acids, Carbon Oxidation, *Naphthalenes.

Feit, Peter W.
SYNTHESIS OF THE STEREOISOMERIC 1, 2; 3, 4-DIOXIDOBUTANE. [1962] 23p. (figs. tables, refs. some formulae omitted).
Order from SLA $2.60 62-16266

Trans. of Chem[ische] Ber[ichte] (West Germany) 1960, v. 93 [no. 1] p. 116 [-127].

DESCRIPTORS: *Stereochemistry, Dioxides, *Butanes, Synthesis, Molecular structure, Molecular isomerism.

Meso- and racemic 1, 2; 3, 4-dioxidobutane are prepared and a method for analytical determination of mixtures of the above is given with the aid of infrared spectra. The synthesis of previously unknown optical antipodes of optically active 2, 3-dichloro- and 2, 3-dibromobutanediols obtained via the dissociation of racemic forms as well as via the optically active 1, 4-dichloro- and 1, 4-dibromobutanediols is described. The absolute configuration of the compounds prepared is determined. (Author)

Franzen, Volker and Mertz, Christian.
ON THE MECHANISM OF HOFMANN ELIMINATION WITH SULFONIUM SALTS. [1962] 5p. 8 refs.
Order from SLA $1.10 62-16258

Trans. of Chem[ische] Ber[ichte] (West Germany) 1960, v. 93 [no. 12] p. 2819-2823.

DESCRIPTORS: *Sulfonium radicals, Salts, Ethyl radicals, Bromides, Iodides, *Methyl radicals, *Elimination reactions, Molecular association, Sodium compounds.

Triethyl-sulfonium-bromide and -iodide become converted smoothly with trityl sodium into triphenyl methane, diethyl sulfide and ethylene. The attack of the base on the sulfonium salt is preponderatingly at the methylene groups, as was shown by experiments with $(CH_3CD_2)_3SX$ (X = Br, I). There is a discussion of the factors that influence the relation of this alpha'-beta elimination to the beta elimination. n-heptyl-(4)-dimethyl-sulfonium-bromide reacts smoothly with trityl sodium to trans-heptene-(3). (Author)

Kirmse, W.
RECENT DEVELOPMENTS IN CARBENES. [1962] [12]p. 91 refs.
Available on loan from SLA 62-18718

Trans. of Angewandte Chemie (West Germany) 1961, v. 73 [no. 5] p. 161-166.

DESCRIPTORS: *Carbenes, Production, Chemical reactions, Decomposition, Elimination reactions, Addition reactions, Molecular structure, Electron transitions.

Karrer, P., Karanth, K. P., and Benz, J.
ISO-DESMETHYLAXEROPHTHENE. [1962] 7p.
Order from K-H $8.75 K-H 5268-a

Trans. of Helv[etica] Chim[ica] Acta (Switzerland) 1949, v. 32, p. 1036-1040.

DESCRIPTORS: Vitamin A, Aldehydes, *Methyl radicals.

Karrer, P., Karanth, K. P., and Benz, J.
THE SYNTHESIS OF ISO-AXEROPHTENE. [1962] 15p.
Order from K-H $18.75 K-H 5062-b

Trans. of Helvetica Chimica Acta (Switzerland) 1949, v. 32, no. 2, p. 436ff.

DESCRIPTORS: Synthesis, Aldehydes, Vitamin A.

Lacassagne, A.
ORGANIC CHEMISTRY; INHIBITING EFFECT OF OXYGENATED MINERAL SALTS ON THE FORMATION OF 3,4-BENZPYRENE DURING THE COMBUSTION OF CIGARETTE PAPER. [1962] 3p.
Order from K-H $3.75 K-H-8467-b

Trans. of [Academie des Sciences, Paris]. Comptes Rendus (France) 1958, v. 246, no. 9, p. 1440-1441 (pub. by Gauthier Villars et Cie., Paris).

DESCRIPTORS: *Tobacco, *Cigarettes, Minerals, Salts, *Benzopyrenes, Paper, Combustion.

Mastagli, P[ierre] Zafiriadis, Z[afiri] and others.
ACTION OF ION EXCHANGERS IN ORGANIC CHEMISTRY: APPLICATIONS TO THE FURFURAL AND BENZALDEHYDE SERIES. 14 July 55, 6p.
Order from SLA $1.10 62-14204

Trans. of Societe Chimique de France. Bulletin [1953, no. 7/8] p. 693-[695].

DESCRIPTORS: *Ion exchange, *Furfuryl alcohols, *Benzaldehydes, Acetyl radicals, Aldehydes.

It is shown that it is possible to obtain, by means of ion exchangers, the condensations between the lineary aldehydes and the furfural, - the acetals starting from the furfural and the benzaldehyde. (Author)

Matsoyan, S. G., Avetyan, M. G., and Voskanyan, M. G.
INVESTIGATIONS IN THE FIELD OF CYCLIC POLYMERIZATION AND COPOLYMERIZATION. III. SYNTHESIS AND CYCLIC POLYMERIZATION OF ALIPHATIC DIVINYL ACETALS, A NEW METHOD OF PREPARATION OF POLYVINYL ACETALS, tr. by I. Gawronska. 5 Oct 61 [13]p. 9 refs. Courtaulds Misc. Lit. 3378; NLL M. 3485.
Order from OTS or SLA $1.60 62-23955

Trans. of Vysokomol[ekulyarnye] Soedineniya (USSR) 1961, v. 3 [no. 4] p. 562-569.

DESCRIPTORS: *Polymerization, *Vinyl radicals, *Acetals, Methylal, Acetaldehydes, Butyrates.

Divinyl formal, divinyl ethanal and divinyl butyral were prepared by acetalation of the corresponding aldehydes with ethylene chlorohydrin and subsequent dehydrochlorination of the β,β'-dichloroethyl acetals. It has been shown that vinyl groups in divinyl acetals react in the presence of radical polymerization initiators in accordance with the "head-to-tail" mechanism, forming cyclic 1,3-dioxane links and the acetal derivatives of polyvinyl alcohol (polyvinyl acetals) are formed by intermolecular growth of these links. The optimum conditions for cyclic polymerization of divinyl acetals and the properties of the polydivinyl acetals obtained have been investigated. (Author)

Mihara, Shigetoshi, Terasaki, Yoshio, and Hirota, Masao.
RETENTION METHOD FOR MOISTURE-RESISTANCE AND FLUIDITY OF UREA. [1962] 5p.
Order from SLA $1.10 62-18038

Trans. of Japanese patent official announcement 31 Showa -3721, 22 May 56, appl. no. 27 Showa-1232, 30 Jan 52, appeal trial no. 29 Showa-1382, by Toyo Koatsu Industries Co. Ltd.

DESCRIPTORS: *Urea, *Moisture, Resistance, *Fertilizers.

A method is proposed for retaining moisture-resistance and mobility of urea, characterized by the fact that a urea addition compound is caused to form at the surface of urea by stirring and mixing urea with one or two or more types among low-degree unsaturated higher aliphatic acids, saturated higher aliphatic acids, higher aliphatic alcohols, or higher aliphatic normal hydrocarbons under warming.

Mikhailov, B. M. and Chernov, N. G.
ON THE COMPLEX NATURE OF ORGANIC COMPOUNDS OF ALKALI METALS. [1962] 2p.
Order from OTS or SLA $1.10 62-16493

Trans. of Kazan U. Uchenye Zapiski (USSR) 1955, v. 115, no. 10, p. 50.

DESCRIPTORS: *Alkali metals, *Organic compounds, Metallic compounds, Complex compound, Metal-organic compounds.

Nagase, Shunji.
FLUORINATION OF MALEIC ANHYDRIDE BY FLUORINE GAS. [1962] 6p. (2 figs. 2 tables 9 Japanese refs. 1 formula omitted) 2 refs.
Order from SLA $1.10 62-16185

Trans. of Kogyo Kagaku Zasshi (Japan) 1961, v. 64, no. 8, p. 1400-1403.

DESCRIPTORS: *Maleic anhydride, Fluorination, *Flourine, Gases, Jets, Towers (Chemistry).

In the direct fluorination of maleic anhydride with fluorine by means of an improved jet reactor, perfluoropropionyl fluoride was obtained at a fairly high yield rate through successive operations of the reactor. This suggests a new method of perfluoropropionyl fluoride production. It became apparent that the use of said reactor makes maleic anhydride reacts mildly with fluorine without explosive, combustive reaction, and that the composition of the reaction products can be controlled to some extent according to the reaction conditions. The production of

perfluorosuccionyl fluoride was not clearly recognized. Also, any products of comparatively large molecular weight such as perfluoroadipoyl fluoride were not recognized. The mechanism of the vapor phase reaction between fluorine and maleic anhydride has been treated here. (Author) (Lecture given at a forum of fluorine chemistry held at Kyoto, Oct., 1960)

Nazarov, I. N. and Zaretskaya, I. I.
ACETYLENE DERIVATIVES. XXXVI. MECHANISM OF CYCLOHYDRATION OF HYDROCARBONS OF THE DIVINYLACETYLENE SERIES: CYCLIZATION OF ALLYL ISOPROPENYL KETONE INTO 1, 3-DIMETHYL-1-CYCLOPENTEN-5-ONE. [1962] 3p. 16 refs.
Order from OTS or SLA $1.10 62-14142

[Condensed] trans. of Akademiya Nauk SSSR. Otdelenie Khimicheskikh Nauk. Izvestiya, 1944, no. 1, p. 65-69.

DESCRIPTORS: *Acetylene derivatives, Hydrocarbons, *Vinyl radicals, Allyl radicals, Propenes, *Ketones, Methyl radicals, *Cyclopentenes.

Nazarov, I. N. and Khomenko, A. Kh.
ACETYLENE DERIVATIVES. XXXVIII. ACTION OF AMMONIA ON VINYL β,β-DIMETHYLVINYL KETONE AND β-METHOXYETHYL β,β-DIMETHYLVINYL KETONE. [1962] 2p. 2 refs.
Order from OTS or SLA $1.10 62-14140

[Condensed] trans. of Akademiya Nauk SSSR. Otdelenie Khimicheskikh Nauk. Izvestiya, 1944, no. 2/3, p. 137-142.

DESCRIPTORS: *Acetylene derivatives, *Ammonia, *Vinyl radicals, Methyl radicals, Ethyl radicals, *Ketones.

Nazarov, I. N. and Khomenko, A. Kh.
ACETYLENE DERIVATIVES. XXXIX. ADDITION OF SECONDARY AMINES TO β,β-DIALKYLVINYL VINYL KETONES. [1962] 2p. 1 ref.
Order from OTS or SLA $1.10 62-14138

[Condensed] trans. of Akademiya Nauk SSSR. Otdelenie Khimicheskikh Nauk. Izvestiya, 1944, no. 4, p. 226-237.

DESCRIPTORS: *Acetylene derivatives, *Amines, Alkyl radicals, *Vinyl radicals, *Ketones.

See also 62-14140

Nazarov, I. N. and Nagibina, T. D.
ACETYLENE DERIVATIVES. XLIII. DIENE SYNTHESIS BASED ON VINYLETHYNYLCARBINOLS. [1962] 3p. 2 refs.
Order from OTS or SLA $1.10 62-14147

[Condensed] trans. of Akademiya Nauk SSSR. Otdelenie Khimicheskikh Nauk. Izvestiya, 1946, no. 1, p. 83-89.

DESCRIPTORS: *Acetylene derivatives, *Diene synthesis, *Vinyl radicals, Ethynyl radicals, Carbonyl radicals, *Ketones.

See also 62-14138

Nazarov, I. N. and Nagibina, T. D.
ACETYLENE DERIVATIVES. XLIV. DIENE SYNTHESIS FROM DIVINYL KETONES. [1962] 3p. 1 ref.
Order from OTS or SLA $1.10 62-14148

[Condensed] trans. of Akademiya Nauk SSSR. Otdelenie Khimicheskikh Nauk. Izvestiya, 1946, no. 1, p. 91-101.

DESCRIPTORS: *Acetylene derivatives, Diene synthesis, *Vinyl radicals, *Ketones.

(See also 62-14147)

Petrov, K. A., Parshina, V. A., and Luzanova, M. B.
A NEW METHOD OF SYNTHESIS OF TERTIARY ALIPHATIC AND ALIPHATIC-AROMATIC PHOSPHINES AND HYDROXYMETHYL PHOSPHINES. 25 May 62 [8]p. 19 refs.
Order from OTS or SLA $1.10 62-18025

Trans. of Zhur[nal] Obshchei Khim[ii] (USSR) 1962, v. 32 [no. 2] p. 553-557.

DESCRIPTORS: *Aliphatic compounds, *Phosphines, Hydroxides, Methyl radicals, Phosphonium radicals, Chlorides, Synthesis, Alkyl radicals.

A method was developed for the preparation of aliphatic and aliphatic-aromatic phosphines and hydroxymethyl phosphines by alkylation of hydroxymethyl phosphines and dealkylation of hydroxymethyl phosphine halides, carried out under the action of tertiary amines. (Author)

Raver, Kh. R., Bruker, A. B., and Soborovskii, L. Z.
THE REACTION OF AQUEOUS FORMALDEHYDE WITH PHOSPHINE AND 1, 1, 2, 2-TETRAFLUOROETHYLPHOSPHINE. 31 May 62 [6]p. 9 refs.
Order from OTS or SLA $1.10 62-18024

Trans. of Zhur[nal] Obshchei Khim[ii] (USSR) 1962, v. 32 [no. 2] p. 588-590.

DESCRIPTORS: *Formaldehyde, Chemical radicals, *Phosphines, Fluorenes, Ethyl radicals.

Experiments showed that the reaction of PH_3 with aqueous HCHO under a slight excess pressure leads to the formation of $(HOCH_2)_4POH$. $H_2PCF_2CHF_2$ reacts with aqueous HCHO only in the presence of HCl, forming $CHF_2CF_2P(CH_2OH)_2$. Oxidation of $CHF_2CF_2P(CH_2OH)_2$ with dilute H_2O_2 gave $CHF_2CF_2P(=O)(CH_2OH)_2$. It is hypothesized that phosphines react with aqueous HCHO by different

mechanisms, depending on their nature: (1) phosphines in which P has adequate electron-donor properties are capable of reacting with aqueous HCHO even in the absence of HCl; these reactions proceed with the formation of an intermediate complex, with proposed structure $[H_3\overset{+}{P}\text{-}CH_2\overset{-}{O}]$; and (2) phosphines containing P with weakened electron-donor properties can enter into reaction with aqueous HCHO only in the presence of HCl; the process, as a rule, stops with the formation of the corresponding derivative of trivalent P.

Rieche, Alfred, Gross, Hans, and Höft, Eugen.
α-HALOGEN ETHERS. IV. SYNTHESES OF AROMATIC ALDEHYDES WITH DICHLOROMETHYL-ALKYL ETHERS. [1962] 8p. (refs. omitted).
Order from SLA $1.10 62-16294

Trans. of Chem[ische] Ber[ichte] (West Germany) 1960, v. 93 [no. 1] p. 88-94.

DESCRIPTORS: *Halogens, *Ethers, Hydrocarbons, *Aldehydes, Synthesis, Chlorides, Methyl radicals, Alkyl radicals, Friedel-Crafts reactions, Catalysts, Catalysis

Aromatic hydrocarbons form the corresponding aldehydes with dichloromethyl-alkyl ethers in the presence of Friedel-Crafts catalysts with good yields. A simple method is given for the preparation of chloroethanes on a laboratory scale. (Author)

Ruggieri, P. de, Gandolfi, C., and Chiaramonti, D.
SYNTHESIS OF PRIMARY AMINES FROM N-SUBSTITUTED IMIDO-ESTERS. 31 Aug 61 [6]p.
Order from SLA $1.10 62-14909

[Condensed] trans. of Gazz[etta] Chim[ica] Ital[iana] (Italy) 1961, v. 91 [no. 6/7] p. 665-671.

DESCRIPTORS: *Amines, Synthesis, *Imides, *Esters, Chemical reactions, Metalation

A new synthesis is described for primary amines via reduction with sodium-zinc amalgam of N-substituted imido-esters. The course of the reaction and its advantages are discussed. (Author)

Schwarzenbach, G. and Lutz, K.
DI-IMIDES OF ENOLIZABLE DIKETONES AND DIALDEHYDES. [1962] 8p. (refs. formulae omitted).
Order from SLA $1.10 62-16446

Trans. of Helv[etica] Chim[ica] Acta (Switzerland) 1940, v. 23, p. 1139-[1146].

DESCRIPTORS: *Imides, *Ketones, *Aldehydes, Synthesis.

Smets, G.
NEW METHODS OF CO-POLYMERIZATION (Méthodes Nouvelles de Copolymérisation). [1962] [26]p. (foreign text included) 11 refs.
Order from SLA $2.60 62-16547

Trans. of Industrie Chimique Belge, 1953, v. 18, no. 8, p. 785-794.

DESCRIPTORS: *Copolymerization, Chemical reactions, Chemical bonds, Reaction kinetics, Vinyl radicals, Acetates.

Sun Tun and others.
A NEW METHOD OF OBTAINING CHEMICALLY DYED CELLULOSE FIBERS. [1961] [10]p. 9 refs.
Order from OTS or SLA $1.10 62-14242

Trans. of #Zhur[nal] Priklad[noi] Khim[ii] (USSR) 1961, v. 34, no. 2, p. 350-356.

DESCRIPTORS: *Cotton cellulose, *Cellulose ethers, *Amino acids, Molecular structure, *Dyes, *Dyeing, Colors, Fibers, Textiles, Woolen textiles.

The study of the dyeing processes of modified cotton fabrics obtained by surface-etherification of cellulose with aliphatic and aromatic amino acids and p-nitrobenzoic acid shows that by introducing a small amount of residues of aliphatic amino acids into the cellulose molecule, the cellulose fibers become dyeable with acid dyes, the dye fastness of these fibers with Cibalan dyes being not lower than the fastness of wool. By introducing a small amount of p-nitrobenzoic acid residues into the cellulose molecule, the cellulose fibers can be strongly dyed with basic dyes. A new method is developed for obtaining chemically dyed cellulose fibers by diazotizing cellulose ethers with aromatic amino acids and subsequent coupling with various azo constituents. By this method various dyeings with a high fastness to various effects can be obtained. (Author)

Thiele, Heinrich and Kettner, Helmut.
HUMIC ACIDS (Über Huminsäuren). [1962] 76p. 47 refs.
Order from SLA $7.60 62-16534

Trans. of Kolloid-Zeitschrift (West Germany) 1953, v. 130, p. 131-160.

DESCRIPTORS: *Humic acids, Synthesis, Molecular structure, *Colloids, *Glucose, Electrolytic titration, Ion exchange, Electrophoresis, Chromatographic analysis, X-ray diffraction analysis, *Graphite, *Nitrogen, Quinolines.

Humic acids are not a chemically homogeneous substance. Rather, they are colloids. Consequently they can be prepared: (a) by building up from molecularly-dispersed substances, (b) by permutoid conversion from other substances which are also colloidal, and (c) by degradation of compactly-dispersed substances. Humic acids are polymeric hydroxy- and polyhydroxy-compounds of benzene-like ring systems, which are linked to each other through bridges. This fact affords a uniform colloid-chemical definition for all humic substances. The macromolecule of humic acid consists of about 10 micro building blocks of molecular dimension. These building blocks consist, in turn, of: (a) nucleus, (b) bridge, and (c) reactive group. (Author)

Wilke, G. and Bogdanovic, B.
BIS-π-ALLYL-NICKEL. [1962] [3]p. 4 refs.
Order from SLA $1.10 62-18077

Trans. of Angew[andte] Chem[ie] (West Germany) 1961, v. 73 [no. 23] p. 756.

DESCRIPTORS: *Allyl radicals, *Nickel compounds, Synthesis, Molecular structure, Cyclododecatriene.

Wilke, G., Kröner, M., and Bogdanovic, B.
AN INTERMEDIATE OF THE SYNTHESIS OF CYCLODODECATRIENE FROM BUTADIENE. [1962] [2]p. 3 refs.
Order from SLA $1.10 62-18076

Trans. of Angew[andte] Chem[ie] (West Germany) 1961, v. 73 [no. 23] p. 755-756.

DESCRIPTORS: *Pentadienes, *Cyclododecatriene, Nickel compounds, Synthesis, Chemical structure.

Yakubovich, A. Ya., Makarov, S. P. and others.
PYROLYSIS AND PHOTOLYSIS OF POLYFLUORONITROSOALKANES; REACTION OF NITROSO COMPOUNDS WITH NITRIC OXIDE. 18 Jan 62 [7]p. 8 refs.
Order from OTS or SLA $1.10 62-14990

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1961, v. 141 [no. 1] p. 125-128.

DESCRIPTORS: *Polymers, *Nitroso radicals, Fluorides, *Nitrogen compounds, Oxides, Pyrolysis, Photolysis.

Polyfluoronitrosoethanes at 100-150° (in a steel autoclave) decompose by a single scheme, forming, as the main products, the corresponding nitroalkanes and azomethines. The properties of the newly synthesized compounds are tabulated. (Extracted)

Znamenskii, N. N. and Frank-Kamenetskii, D. A.
THERMAL REACTIONS OF ACETYLENE. III. KINETIC THEORY OF ACETYLENE FORMATION IN THE THERMAL DECOMPOSITION OF METHANE. [1962] 6p. 7 refs.
Order from OTS or SLA $1.10 62-18170

Trans. of Zhur[nal] Fiz[icheskoi] Khim[ii] (USSR) 1946, v. 20, no. 11, p. 1319-1323.

DESCRIPTORS: *Acetylenes, Chemical reactions, Pyrolysis, *Methanes, *Kinetic theory, Reaction kinetics.

Relationships were found by means of which it is possible to make approximate calculations of the maximum acetylene yields and optimum contact time corresponding to the maximum yields, for various temperatures and pressures. On the basis of these relationships calculations were made of the maximum yields and optimum contact times. The results of the calculations coincide closely with the experimental data of various investigators in the region of temperatures of the order of 1800°K. It was shown that it is logical to conduct the pyrolysis of methane in the absence of a catalyst only at temperatures no lower than 1200°K, at pressures of the order of 0.1 atm. The theoretically best possible yields of acetylene may be obtained at pressures of the order of 0.1 atm between the temperature limits of 1600 and 1800°K; the maximum yield then increases with an increase in temperature and the optimum contact time decreases with an increase in pressure. There is a regular decrease in the values of the optimum contact time in the ratio 1:0.1:0.01 on 200° increase in temperature; furthermore, the curves of the decrease in t_{max} have exactly the same shape for all the pressures used in the calculations. (Author)

Physical Chemistry

A SIMULTANEOUS ROENTGENOGRAPHIC AND ELECTRON-MICROSCOPIC EXAMINATION OF THE THERMAL REARRANGEMENT SEQUENCE: GAMMA-FeOOH, GAMMA-Fe_2O_3, ALPHA-Fe_2O_3. [1955] 7p. 23 refs.
Order from SLA $1.10 62-14627

Trans. of [Zeitschrift für] Physik[alische] Chem[ie] Leipzig (Germany) [1941] v. 50B, p. 13-22.

DESCRIPTORS: *Iron compounds, *Hydroxides, *Oxides, Solids, Crystals, Electron microscopy, X-ray diffraction analysis, Temperature.

Preparations of gamma-Fe_2O_3 and alpha-Fe_2O_3 were prepared from gamma-FeOOH by heating to different elevated temperatures. The series of preparations were examined roentgenographically for average primary particle size and form and further with the electron microscope. The coherence-domains of gamma-FeOOH consisted of small prisms which were, however, thinner and shorter than the small crystals made visible by electron microscopy. It followed correspondingly for all other preparations that electron micrograms reproduced secondary particles. All dimensions including those of secondary particles lay below the order of magnitude of a few 1000 to about 100,000Å assumed for mosaic blocklets. The acicular form and size of the secondary aggregates remained on transformation of rhombic gamma-FeOOH to cubic gamma-Fe_2O_3 at 250° and 400° and even on transformation of the latter to the hexagonal alpha-Fe_2O_3 at 500° they were predominately retained although the average particle sizes, after preliminary growth on heating gamma-FeOOH, decreased sharply on conversion to gamma-Fe_2O_3 only to increase again on transformation to alpha-Fe_2O_3 with formation of platelets. Only after heating to 750° had the needles disappeared from the electron micrógram and been replaced by clumpy secondary aggregates. (Author)

Bakhman, N. N. and Kondrashkov, Yu. A.
A BURNING FRONT MODEL FOR CONDENSED MIXTURES. [1962] 6p. 6 refs.
Order from OTS or SLA $1.10 62-18055

Trans. of Akademiya Nauk SSSR. Doklady, 1962, v. 142, no. 2, p. 377-379.

DESCRIPTORS: *Combustion, *Flames, Condensation, Mixtures.

The dependance of burning rate u on particle sizes d of components for condensed mixtures, the components of which are gasified before mixing, is of a S-shape. At $d \leq d_{min}$ u does not altogether depend on d; then u noticeably decreases with the increase of d, but at large d the dependance u(d) decreases again. A simple burning front model is considered which makes it possible to account for the nonuniformity and to arrive at the approximate expression for u(d) which can be compared with the actual experience.

Balandin, A. A.
STRUCTURAL CONFORMITY DURING CATALYSIS. [1962] 5p. 30 refs.
Order from OTS or SLA $1.10 62-16575

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1960, v. 133 [no. 5] p. 1073-1076.

DESCRIPTORS: *Catalysts, *Crystal structure, Metallic crystals, Tables

A table of smallest interatomic distances for 4 types of crystalline lattices is compiled on the basis of the data of L. E. Sutton (Tables of Interatomic Distances and Configuration in Molecules and Ions, London, 1958).

Beranek [J.] and Sokol, D.
THE FLUIDIZATION VELOCITY OF PARTICLES OF IRREGULAR SHAPE (Skorost' Psevdoozhizheniya Chastits Nepravil'noi Formy). [1962] [20]p. 8 refs.
Available on loan from SLA 62-18104

Trans. of Khim[icheskaya] Prom[yshlennost'] (USSR) 1959, no. 5 [p. 430-435].

DESCRIPTORS: *Particles, *Fluidized solids, Turbulent flow, Velocity, Naphthalenes, Oxidation, Phthalic anhydride, Production, Pyrites, Sedimentation

Boreskov, G. K., Gorbunov, A. and Masanov, O.
CANJE ISOTOPICO EN EL NITROGENO MOLECULAR SOBRE LOS CATALIZADORES DE HIERRO DE LA SINTESIS DEL AMONIACO (Izotopnyi Obmen v Molekulyarnom Azote na Zheleznykh Katalizatorakh Sintesa Ammiaka) (Isotope Exchange in Molecular Nitrogen on the Iron Catalysts Employed in Ammonia Synthesis). 8p. 10 refs. CID: 62-7. (text in Spanish).
Order from OTS or ETC $0.90 62-26207

Trans. of Akademiya Nauk SSSR. Doklady, 1958, v. 123, no. 1, p. 90-92.

DESCRIPTORS: *Ammonia, *Synthesis, Iron Catalysts, Exchange Reactions, Radioactivity.

Börnert, Heinz and Weber, Ulrich von.
THE PERMEATION OF HYDROGEN GAS THROUGH QUARTZ GLASS COATED WITH PALLADIUM (Notiz über die Permeation des Wasserstoffs durch Palladiumbedecktes Quarzglas). [1962] [7]p. (foreign text included) 3 refs.
Order from SLA $1.60 62-16416

Trans. of Zeitschrift für Anorganische Chemie (East Germany) 1959, v. 300, p. 81-83.

DESCRIPTORS: *Glass, Coatings, *Palladium, Hydrogen, Gases, Permeability, Quartz, *Metal films, *Diffusion.

The permeation of hydrogen through quartz glass coated by a film of palladium is in the temperature range from 400 to 700° C, 1.44 times greater than that through pure quartz glass. Above 700° C, this effect disappears because of recrystallization of Pd. (Author)

Deryagin, B. V. and Karasev, V. V.
STUDY OF THE BOUNDARY VISCOSITY OF ORGANIC SUBSTANCES ACCORDING TO THE KINETICS OF THINNING THEIR WETTING LAYERS IN THE BLOWING OFF PROCESS [Izuchenie Granichnoi Vyazkosti Organicheskikh Veshchestv po Kinetike Uton'sheniya Ikh Smachivayushchikh Sloev v Protsesse Sduvaniya]. [1961] 7p. 18 refs. MDF D 111.
Order from OTS $0.50 62-11230

Trans. of A[kademiya] N[auk] SSSR. Doklady, 1955, v. 101, no. 2, p. 289-292.

DESCRIPTORS: *Films, Viscosity, *Fluid flow, Boundary layer, *Organic materials, Gels, Stearic acids, Alcohols.

A variation of the blowing-off method is described, which is suitable for films of considerably less stability and which is based on the observation of the thinning of a specific part of the wetting film during the blowing-off process. (Author)

Esterka, F. and Borisek, R.
THE EFFECT OF LIGNOSULFONIC COMPLEX ON COLLOIDAL AND RHEOLOGICAL PROPERTIES OF THE BENTONITE SUSPENSION (Vplyv Ligninsulfonoveho Komplexu na Koloidne a Reologicke Vlastnosti Bentonitickej Suspenzie). [1962] [18]p. (Foreign text included) 20 refs.
Order from SLA $1.60 62-14571

Trans. of Chemicke Zvesti (Czechoslovakia) 1956, v. 10, no. 10, p. 604-611.

DESCRIPTORS: *Bentonite, Clays, Tannic acids, Phenols, Polymers, Stabilization, *Colloids, *Sulfonic acids, *Lignin, Viscosity, Deformation.

A theory of the organic dispersing agent in the bentonite suspension is developed. There was studied and verified the constitution of the lignine-complex which was isolated from the sulfite waste liquor in a chemical process. Furthermore, there was described the stabilization of the colloidal and rheological

properties of mineral clay of the Sarmatian stratum-complex of the Intralpine Neogenic basin with chlor-ligno-sulfonic acid and compared with the dispersion effect of the tannin. (Author)

Jacqmain, D.
FILTRATION UNDER CONSTANT PRESSURE.
16 Mar 62, 21p. (3 figs. omitted).
Order from SLA $2.60 62-14708

Trans. of Génie Chimique (France) 1961, v. 85, no. 6 p. 252-262.

DESCRIPTORS: *Separation, Pressure, *Fluid flow, *Porous filters, Viscosity, Friction.

Kabachnik, M. I. and Balueva, G. A.
THE BASICITY OF PHOSPHINES AND THE HAMMETT EQUATION. 14 June 62 [5]p. 14 refs.
Order from OTS or SLA $1.10 62-18020

Trans. of Akad[emiya] Nauk SSSR. Otdel[enie] Khim-[icheskikh] Nauk. Izvest[iya] 1962 [no. 3] p. 536-537.

DESCRIPTORS: *Phosphines, Phosphorus, Dissociation, *Hydrogen ion concentration, Equations.

The applicability of the Hammett equation to basicity constants of phosphines is shown. Values of the constant σ for the substituents n-C_8H_{17}, cyclo-C_6H_{11}, and CH_2CH_2CN on phosphorus were derived. (Author)

Knunyants, I. L. and Sokol'skii, G. A.
ELECTROCHEMICAL FLUORINATION. [1962] [36]p. (2 figs. equations refs. omitted).
Order from OTS or SLA $3.60 62-10564

Trans. of Reaktsii i Metody Issledovaniya Organicheskikh Soedinenii (USSR) 1957, v. 6, p. [343]-367.

DESCRIPTORS: *Electrochemistry, *Fluorination, Electrolysis, Electrolytes, Temperature, Organic compounds.

Data are presented on (1) the nature of the electrochemical fluorination method, (2) the apparatus and materials of the method, (3) areas for application of the method, and (4) examples of electrochemical fluorination.

Landau, M. A. and Shchekin, V. V.
CHEMICAL CONFORMITY IN HETEROGENOUS CATALYSIS. [1962] 8p. 30 refs.
Order from OTS or SLA $1.10 62-14817

Trans. of #Akad[emiya] Nauk SSSR. Otdel[enie] Khim[icheskikh] Nauk. Izvest[iya] 1961, no. 3, p. 430-436.

DESCRIPTORS: *Catalysts, Metals, Crystals, Surface properties, Valence, Adsorption, *Nitrogen, Hydrogen, *Deuterium.

Free valencies of various forms exist on surface of metals and ionic crystals, corresponding to normal and excited valent states of adsorbent atoms; different forms of free valencies represent active points of various activity. Relationship of catalytic activity with the preparation method of catalyst is explained, in addition to other causes, by the effect of catalyst genesis on the ratio of different forms of the free valencies on catalytic surface. On the basis of conception on the chemical conformity of reacting molecules with the catalyst and of the theory on metals of Pauling an explanation is given for the variation of catalytic activity in metals of IV period in reactions, inhibited through nitrogen chemisorption, and in reactions, tied with a chemisorption of hydrogen or deuterium. (Author)

Liang, Mong-bau and Tsutsumi, Shigeru.
REACTION OF CARBON MONOXIDE WITH PHENYLLITHIUM. [1962] 9p. 5 refs.
Order from SLA $1.10 62-18070

Trans. of [Nihon Kagaku Zasshi] (Japan) 1961, v. 82, p. 880-882.

DESCRIPTORS: *Chemical reactions, *Carbon compounds, *Monoxides, *Phenyl radicals, *Lithium compounds, *Metalorganic compounds, Reaction kinetics.

The reaction of carbon monoxide with phenyllithium was carried out at -10°C and normal pressure for 40 minutes. Among the reaction products, benzaldehyde, benzohydrol, triphenylmethane, benzophenone, benzoin, diphenylbenzoylmethane, p-hydroxytriphenylacetic acid and benzoic acid were isolated, among compounds related to carbon monoxide, and phenol, diphenyl and methylphenylcarbinol were obtained among those unrelated to carbon monoxide. This reaction is supposed to proceed via a coordination compound between carbon monoxide and phenyllithium, as in the case of organomagnesium halides. (Author)

Meier, H.
A CLASSIFICATION OF ORGANIC DYES, BASED ON PHOTOELECTRIC BEHAVIOR. [1962] 18p. 64 refs.
Order from SLA $1.60 62-14048

Trans. of Zeitschrift für Wissenschaftliche Photographie, Photophysik, und Photochemie (East Germany) 1958, v. 53, p. 1-17.

DESCRIPTORS: *Dyes, Classification, Fluorescent dyes, Azo compounds, Acridines, *Photochemistry, *Photoelectric cells, Rhodium.

It is shown that the influence of oxygen on the briefly flowing photocurrent of organic dyes may divide them into two groups: In O_2 photoconductors and vacuum photoconductors. Group I includes dyes of the malachite green and fuchsin classes, rhodamines thiazines, & oxazines; group II includes fluoresceins, azo dyes and acridine dyes. By way of explanation, we discuss two different conductivity mechanisms for the photocurrent by analogy with inorganic systems, electron conduction and defect electron conduction, in which oxygen acts differently. Electrode grid cells were used for measurements (internal photoelectric effects by cross field illumination) which were made by "electric scratching" a rhodium coating on glass. (Author)

Myamlin, V. A.
ESTIMATE OF THE SURFACE CONDUCTIVITY OF A GERMANIUM-ELECTROLYTE CONTACT. [1962] 4p. 2 refs.
Order from OTS or SLA $1.10 62-10643

Trans. of #Zh[urnal] Fiz[icheskoi] Khim[ii] (USSR) 1961, v. 35, no. 9, p. 2166-2167.

DESCRIPTORS: *Semiconductors, Surface properties, *Conductivity, Electrolytes, *Germanium, *Sliding contacts.

Nagase, Shunji, Baba, Hajime, and Kojima, Rimpei.
EFFECTS OF WATER ON THE PREPARATION OF PERFLUOROCARBOXYLIC ACIDS BY ELECTROCHEMICAL FLUORINATION. [1962] 7p. (4 tables omitted) 10 refs.
Order from SLA $1.10
Original copy poor quality; available on loan also

Trans. of [Kogyo Kagaku Zasshi] (Japan) 1961, v. 64, no. 12, p. 2124-2126.

DESCRIPTORS: *Electrochemistry, Fluorination, *Carboxylic acids, *Fluorides, Synthesis, Water, Chemical reactions.

The purpose was to determine how a trace of water (less than 1%) in anhydrous liquid hydrogen fluoride affects the yield, the composition and electric current efficiency on the preparation of perfluerocarboxylic acids from ethyl alcohol, n-propyl alcohol, athyl acetate and n-propyl propionate by electrochemical fluorination. Before fluorination 20 grams of each testing material and 0, 2, 4, 5, and 7 grams of water were added to 1 liter of anhydrous liquid hydrogen fluoride. The results show that such small amounts of water do not affect the yield of perfluorocarboxylic acids, but it does greatly lower the electric current efficiency. Moreover, the water existed in anhydrous liquid hydrogen fluoride is mostly electrolyzed before the testing materials. However, it is not observed that testing materials are oxidized by oxygen fluoride formed due to the fluorination of water. (Author)

Nagase, Shunji, Baba, Hajime, and Kojima, Rimpei.
PREPARATION OF PERFLUOROCARBOXYLIC ACID FROM KETONES BY ELECTROCHEMICAL FLUORINATION. [1962] 8p. (5 tables omitted) 10 refs.
Order from SLA $1.10 62-14642
Original copy poor quality; available on loan also

Trans. of [Kogyo Kagaku Zasshi] (Japan) 1961, v. 64, no. 12, p. 2126-2128.

DESCRIPTORS: *Electrochemistry, Fluorination, *Carboxylic acids, *Fluorides, Synthesis, *Ketones.

The yield of perfluorocarboxylic acid obtained from ketones by the electrochemical fluorination was excellent. Trifluoroethanoic acids are obtained from acetone, acetyl acetone and ethyl acetoacetate. The mixture of trifluoroethanoic and perfluoropropionic acid were obtained from methyl ethyl ketone and diethyl ketone. The mixture of perfluoropropionic acid, trifluoroethanoic acid and perfluorobutylic acid are obtained from methyl propyl ketone. In this case, the composition percentage of perfluorocarboxylic acids formed were almost not affected by the variation of the electric current densities. The yield of the perfluorocarboxylic acids from acetone, methylethyl ketone, diethyl ketone and methyl propyl ketone were highest when anode current density was 3.3 A/dn^2. It was explained that the mechanism of reaction from ketone to perfluorocarboxylic fluoride was that the hydrogen fluoride compound would form as an interim product first, then it would be further fluorinated to become the perfluorocarboxylic fluoride. (Author)

Nagase, S[hunji], Baba, H., and Kojima, R.
PREPARATION OF PERFLUORO CARBOXYLIC ACIDS BY ELECTROCHEMICAL FLUORINATION OF UNSATURATED COMPOUNDS. [1962] 8p. (8 tables. 6 refs. omitted) 2 refs.
Order from SLA $1.10 62-16190

Trans. of Kogyo Kagaku Zasshi (Japan) 1962, v. 65, no. 1, p. 38-[41].

DESCRIPTORS: *Carboxylic acids, Acids, *Fluorides, Synthesis, Electrochemistry, Fluorination, Alcohols, Esters, Ketones.

Perfluoro carboxylic acids have been obtained by electrochemical fluorination of unsaturated compounds including alcohols, esters, and ketones. Good yields of perfluoro carboxylic acids have been obtained from esters of unsaturated carboxylic acids just as from saturated esters. Ethyl acrylate, butyl acrylate, and ethyl crotonate gave 82-97 mol% yields of the corresponding perfluoro carboxylic acids at the cathode density of 3.0 A/dm^2. Yields of perfluoro carboxylic acids from other compounds were quite poor, however. With allyl alcohol, crotonyl alcohol, allyl acetate, methyl vinyl ketone, or mesityl oxide, cleavage of double bonds during fluorination or polymerization occurred, and consequently the yields of the corresponding perfluoro carboxylic acids were much lower than those from saturated compounds. Especially crotonyl alcohol gave large quantities of polymer. (Author)

Ogorodnikov, S. K., Kogan, V. B., and Nemtsov, M. S.
LIQUID-VAPOR EQUILIBRIUM IN BINARY AND TERNARY SYSTEMS, FORMED BY C_5 HYDROCARBONS WITH NITROMETHANE. Communication 6 of [Investigation of C_5 Hydrocarbon Mixtures Separation by the Methods of Azeotropic and Extractive Fractionation]. [1962] 9p. 8 refs.
Order from OTS or SLA $1.10 62-16572

Trans. of #Zhur[nal] Priklad[noi] Khim[ii] (USSR) 1961, v. 34 [no. 4] p. 841-847.

DESCRIPTORS: *Hydrocarbons, Pentanes, Mixtures, *Methanes, *Nitro radicals, Liquids, Vapors, *Chemical equilibrium, Separation, Fractionation.

An experimental study on liquid-vapor equilibrium in five binary and three ternary systems, formed by nitromethane and C_5 hydrocarbons showed that in presence of nitromethane the relative volatility coefficient is increasing 4.5 fold in system paraffin/diene, 2.5 fold in system paraffin/olefin and 1.8 fold in system olefin/diene. (Author)

Ovchinnikov, L. N. and Shur, A. S.
RESEARCH OF INFILTRATION SOLUTIONS UNDER PRESSURE (Issledovanie Infil'tratsii Rastvorov pod Davleniem). [1962] [59]p. (foreign text included) 12 refs.
Order from OTS or SLA $5.60 62-16421

Trans. of Akademiya Nauk SSSR. Institut Geologii Rudnykh Mestorozhdenii, Petrografii, Minealogii i Geokhimii. Trudy, 1956, no. 6, p. 57-72.

DESCRIPTORS: *Geochemistry, Solutions, Metals, *Porous filters, Marble, Semipermeability, Pressure, Ion exchange.

With the aid of special apparatus, the filtration effect was studied for the solutions $CuSO_4$, $CaSO_4$, $MgSO_4$, $MnSO_4$, $NiSO_4$, Na_2SO_4, $CaCl_2$, and NaCl, filtrating through a marble filter under a pressure of 2, 4, 6, and 8 atm. With an increase in pressure there is also a valid increase in the quantity of the solution matter on the filter. Changing the concentration of the solution on the filter, with a changing pressure is subject to equation $\log \eta = -\beta \log \frac{V_0 - V}{K_2} + \beta \log P + \log A$.

The coefficient of semipermeability (η - the true size of the filtration effect - with exception to the inactive influence of diffusion in the experimental solution) and the pressure fluctuates within the limits of 16 to 46%. The divalent metal solution controls the size of the filtration effect, exceeding 2 to 2.5 times the appropriate size for a univalent metal solution. The accompaning filtration effect simultaneously produces an ion exchange between the solution and the filter matter; this process, plays, apparently, an important part in metasomatism. (Author)

Sbrolli, Walter and Bertotti, Elvio.
MEASUREMENT OF THE PHOTOCHEMICAL ACTIVITY OF TITANIUM DIOXIDE. Communication to the National Congress of Chemistry (no. 8) Turin, 27 May-2 June 58. [1962] 10p. (8 figs. omitted) 9 refs.
Order from SLA $1.10 62-16445

Trans. of Annali di Chimica (Italy) 1959, v. 49, p. 1143-1154.

DESCRIPTORS: *Titanium compounds, *Dioxides, Silver compounds, Nitrates, Photochemical reactions, Oxidation, Ultraviolet radiation, *Photochemistry.

A method is described for measuring the photochemical activity of titanium dioxide, based on the oxidizing action thereof on the Ag^{pos} ion when it is subjected to ultraviolet radiation. The reaction is observed by measuring the loss of reflectance as a function of time on a paste containing titanium dioxide and silver nitrate in aqueous solution. The amount of variation of reflectance is a function of the type of lamp used and of the initial concentration of the silver nitrate, but is not very sensitive, within a certain range, to variations in the solid-liquid ratio. (Author)

Schäfer, Harald.
STUDIES ON THE Fe_2O_3-$FeCl_3$-H_2O-HCl SYSTEM. I. [INFLUENCE OF HYDROGEN CHLORIDE ON α-IRON OXIDE]. [1962] [43]p. 25 refs.
Available on loan from SLA 62-18213

Trans. of Zeitschrift für Anorganische Chemie (East Germany) 1949, v. 259, p. 53-74.

DESCRIPTORS: *Hydrogen compounds, *Chlorides, *Iron compounds, *Oxides, Chemical reactions, Chemical equilibrium, Temperature, Dissociation.

Experimental studies were made of the equilibriums which were reached following the action of HCl on α-Fe_2O_3 between 300 and 1000°C. The methodics of the equilibrium measurements are described and the accuracy of the results is discussed. The reaction equilibriums $Fe_2O_3 + 6\ HCl = Fe_2Cl_6\ gas + 3\ H_2O$ and $Fe_2O_3 + 6\ HCl = 2\ FeCl_3\ gas + 3\ H_2O$ as well as the dissociation process $Fe_2Cl_6\ gas = 2\ FeCl_3\ gas$ were calculated from the measurements. Furthermore, we show how it is now possible to calculate in advance the occurrence of a reaction even in complicated cases. (Author)

Shcheglova, N. A. and Pshezhetskii, S. Ya.
KINETICS OF n-BUTYLENE DEHYDROGENATION, PT. II. [1962] 8p. 2 refs.
Order from OTS or SLA $1.10 62-16634

Trans. of Zhur[nal] Fiz[icheskoi] Khim[ii] (USSR) 1954, v. 28, p. 1280-1285.

DESCRIPTORS: *Butenes, *Dehydrogenation, Reaction kinetics, Aluminum compound, Chromium compounds, Oxides, Catalysts, Catalysis.

Reaction kinetics of butylene dehydrogenation on chromia-alumina catalyst within the intervals of temperatures 450° to 500°C and of partial pressures of butylene 0.05 to 0.3 atm is described by the equation: $W = KC_2^{0.2}$ No significant reaction rate inhibition by the reaction products butadiene and hydrogen was observed. The apparent activation energy of the reaction is equal to 27,000 ± 1,000 cal/mole. (Author) (See also 62-10436)

Smirnova, I. I.
ON THE ACTIVATION ENERGY OF THE THERMAL DISSOCIATION OF POTASSIUM PERMANGANATE. [1962] 10p. (7 figs. 1 table omitted) 6 refs.
Order from OTS or SLA $1.10 62-16633

Trans. of [Zhurnal Fizicheskoi Khimii] (USSR) 1956, v. 30, no. 12, p. 2649-2655.

DESCRIPTORS: *Permanganates, *Potassium compounds, Pyrolysis, Dissociation, Energy, Reaction kinetics.

Formulas are adduced for the calculation of the activation energies in the processes of the orgination (emergence) of initial centers and the nuclear growth of the solid product during the thermal dissociation of potassium permanganate. There are calculated the overall activation energy, the activation energy of the first and second stages in the process of the origination (emergence) of initial centers and the activation energy of the nuclear growth of the solid product during the thermal dissociation of potassium permanganate. It is shown, that the activation energy of the first stage is greater than that of the

second, and that the activation energy of the nuclear growth of the solid product is considerably less than the activation energy of both stages of the process of the origination (emergence) of initial centers. The latter points to the catalytic action of the solid product. There is set forth the possible chemical affinity in the process of formation of initial centers. (Author)

Steidl, M.
CONTRIBUTION TO THE KNOWLEDGE OF [MIXING] AGITATION. IX. RATE OF SOLUTION OF A POLYDISPERSE SOLID SWIRLED PHASE IN A LIQUID; RATE RELATION FOR THE CASE OF AN ISOTHERMAL NONSTATIONARY PROGRESS WITH THE BREAKUP OF GRAINS. [1961] 18p. 7 refs.
Order from SLA $1.60 61-18707

Trans. of [Sbornik Chekhoslovatskykh Khimicheskykh Rabot] 1961, v. 26, no. 3, p. 601-612.

DESCRIPTORS: *Solids, *Liquids, *Mixtures, Solubility, Reaction kinetics, Statistical processes.

Portions of this report will not reproduce well.

On the basis of a conception in terms of a model, modified in a suitable way, the time relation determining the kinetics of the process was formulated for the distribution function of the characteristic grain dimension. With otherwise analogous conditions maintained, the method used also reaches its objective in the case of the reaction of a swirled polydisperse granular material with a liquid, with a breakup of the grains at the same time and a negative or positive change in grain size, the rate of which depends in a known manner on the composition of the liquid. (Author) (See also 61-12786)

Stepukhovich, A.D., Kosyreva, R. V., and Petrosyan, V. I.
KINETICS AND MECHANISM OF HYDROCARBON DECOMPOSITION: MECHANISM OF THE THERMAL CRACKING OF BUTANES. [1962] 7p. 7 refs.
Order from OTS or SLA $1.10 62-16574

Trans. of #Zhur[nal] Fiz[icheskoi] Khim[ii] (USSR) 1961, v. 35 [no. 6] p. 1331-1336.

DESCRIPTORS: *Hydrocarbons, *Butanes, Decomposition, Pyrolysis, Pressure, Reaction kinetics.

A chromatographic study of the relation between the composition of the products of the thermal cracking of butane and temperature, pressure and extent of decomposition showed that decomposition is always accompanied by marked formation of propane. Dehydrogenation in the cracking of butane and deethanization in the cracking of isobutane are not connected with the principal radical chain cycles of accumulation of the primary products and are perhaps heterogeneous reactions taking place on the walls. A small shift towards demethylation, observed with increase in pressure and extent of decomposition is due to isomerization of butyl and tertiary isobutyl into secondary butyl and primary isobutyl radicals. The anomalously low yield of hydrogen in comparison with methane observed in the cracking of isobutane on increase in temperature is explained by the intermolecular isomerization of tertiary isobutyl to primary isobutyl radicals. The residual cracking reaction at the boundary of self inhibition by the products is of a chain character. The apparent chain length, as determined by the yield of propane, decreases with extent of decomposition and at the self inhibition boundary is of the order of 10 units. An initiating effect of olefin decomposition on the cracking process is observed. (Author)

Teshima, T., Hiyoshi, S. and others.
EXTRACTIVE DISTILLATION. I. THE VAPOR-LIQUID EQUILIBRIUM OF THE SYSTEM WATER-HOAc-H_2SO_4. [1962] [12]p. (foreign text included) 12 refs.
Order from SLA $1.60 62-16184

Trans. of [Kogyo Kagaku Zasshi] (Japan) 1952, v. 55 [no. 7] p. 492-494.

DESCRIPTORS: *Acetic acids, *Sulfuric acid, Water, Chemical equilibrium, Vapors, Liquids, *Fractionation, Carbonization.

Equilibrium distillation of HOAc-H_2O system was carried out with added sulfuric acid. It was found that the degree of the relative volatility of water and acetic acid was reversed at a sulfuric acid concentration of 12%. Increasing the concentration of sulfuric acid increased the volatility of acetic acid. The ternary equilibrium relationship was accurately expressed by an equation when no carbonization occurred, viz., when sulfuric acid concentration was 0-40% and the boiling point was less than 125-130°C. The vapor-liquid equilibrium constants for the ternary mixture in ICT are considered to be those for a carbonized residue. Sulfuric acid is an effective extractive agent for H_2O-HOAc binary system. Therefore, it is industrially feasible to recover acetic acid from aqueous solution by continuous extractive distillation with sulfuric acid. (Author)

Tomassi, Witold.
ON THE APPLICATION OF POWDER ELECTRODES IN THE PROCESS OF ELECTROLYSIS. [1962] [7]p. (1 fig. 1 table omitted) 5 refs.
Order from SLA $1.10 62-16459

Trans. of Acad[emie] Royale [des Sciences, des Lettres et des Beaux-Arts] de Belgique. Classe des Sciences. Bull[etins] 1960 [ser. 5] v. 46 [no. 5] p. 390-395.

DESCRIPTORS: *Electrochemistry, *Electrolysis, Powder metals, Electrodes, Activated carbon, Platinum electrodes, Nickel electrodes.

It has been demonstrated that by using powder electrodes with powder capable of adsorbing the products of electrolysis it is possible to obtain an appreciable lowering of the electrolytic voltage and effect the electrolysis under the voltage (tension) amounting to a few percents of the reversible voltage. Activated carbon powders, black platinum powders, and Raney nickel were used. The important parameters of the process are the pressure under which the powder remains in contact with the end electrode and the density of the current. (Author)

Tomassi, W[itold], Jankowska, H., and Prokopowicz, M.
STUDY OF ADSORBENTS AND ISOTHERMS OF ADSORPTION BY MEANS OF POWDER ELECTRODES. [1962] 23p. (2 figs. 8 tables omitted) 7 refs.
Order from SLA $2.60 62-16452

Trans. of [Académie Royale des Sciences, des Lettres et des Beaux-Arts de Belgique]. Classe des Sciences. Bull[etins] 1957 [ser. 5] v. 43 [no. 3] p. 195-214.

DESCRIPTORS: *Adsorbents, Adsorption, *Electrodes, Potentiometers, Activated carbon, Carbon, Hydrogen, Potential theory.

An analysis is presented of published and unpublished works on potentiometric investigations, based on the application of powder electrodes and relating to various preparations of activated and non-activated carbon. There is also analysed the potentiometric determination of isotherms of adsorption for several carbon preparations. There is established a high sensitivity for the powder electrode method which permits distinguishing the various preparations of carbon as well as to define the surface concentration of the adsorbed element. The probable mechanism is presented of the processes in the powder electrode, which explains the experimental facts observed of the change of potential of the powder electrode with respect to the concentration and the lapse of time. (Author)

Vielstich, W.
THE DEPOSITION VOLTAGE OF HYDROGEN IN THE ELECTROLYSIS OF AQUEOUS SOLUTIONS WITH RANEY METAL ELECTRODES. 18 Apr 62 [18]p. 34 refs.
Order from SLA $1.60 62-18040

Trans. of Chem[ie]-Ing[enieur]-Tech[nik] (West Germany) 1961, v. 33, p. 75-79.

DESCRIPTORS: Electrochemistry, Electrodeposition, *Electrolysis, Nickel catalysts, *Hydrogen, Voltage, Fuel cells, Electrolytic cells, Water, Decomposition, *Electrodes.

When using Raney nickel as catalyst, one obtains electrodes with zero hydrogen overvoltage for the electrolysis of alkaline solutions. In 27% KOH, at 80° C. and 1500 amps/sq. m., the deviation from reversible hydrogen potential with the double skeleton electrodes developed by Justi and coworkers is only 30 mV. Water decomposers with the new electrodes operate at terminal voltages between 1.4 and 1.6V. By combination of an electrolysis cell and a H_2-O_2 fuel cell, electrochemical energy storage with an efficiency of over 60% can be achieved. Further possible applications in connection with alkali chloride electrolysis, amalgam-hydrogen cells, and deuterium enrichment are discussed. (Author)

Zuev, Yu. S.
SEPARATION OF THE PHOTOCHEMICAL FROM THE LIGHT-FILTERING EFFECT AND LATENT PHOTOSENSITIZATION. [1958] 8p. 9 refs.
Order from OTS or SLA $1.10 62-18171

Trans. of Zhur[nal] Fiz[icheskoi] Khim[ii] (USSR) 1958, v. 32, no. 10, p. 2308-2314.
Another trans. is available from ATS $9.57 as ATS-03L29R [1958] 8p.

DESCRIPTORS: *Photochemical reactions, *Photosensitivity, Separation, *Rubber, Polymers.

A method is presented for separating quantitatively the light-filtering from the photochemical effect of additives under irradiation of a system with monochromatic light. The existence of a latent photosensitizing action is demonstrated, together with the possibility of observing it by a quantitative separation of the light-filtering and photochemical actions. (Author)

EARTH SCIENCES

Bogorov, V. G.
GEOGRAPHICAL ZONES IN THE PELAGIAL OF THE CENTRAL PACIFIC OCEAN (Geograficheskie Zony v Pelagiali Tsentral'noi Chasti Tikhogo Okeana) tr. by Wilvan G. Van Campen. Dec 61 [11]p. 8 refs.
Order from OTS or SLA $1.60 62-23280

Trans. of Akademiya Nauk SSSR. Institut Okeanologii. Trudy [1960] v. 41, p. 8-16.

DESCRIPTORS: Geography, Classification, *Pacific Ocean, *Oceanography, Ocean currents, Temperature, Aquatic animals, Phosphates, Oceanographical data.

Chudnovskii, A. F.
PHYSICS OF HEAT EXCHANGE IN SOIL. [1962] [317]p. 179 refs. USASIA Trans. Log no. 1381.
Order from OTS or SLA $19.75 62-32507

Trans. of mono. Fizika Teploobmena v Pochve, Moscow, 1948, 220p.

DESCRIPTORS: *Soils, *Heat transfer, Heat exchangers, *Geophysics, *Agriculture, *Meterology, Thermal diffusion, Test methods, Mathematical analysis.

Contents:
Basic problem in the field of soil energetics, and methods of its solutions
The role soil heat exchange plays in the total heat balance and the significance of such an exchange for geo-agrophysical problems
Study methods of thermal conditions in soils
Basic regularities in thermal conditions of soil
The theory of heat diffusion in the upper layers of soil
Application perspective of the present research on heat exchange in soil for the solution of practical problems.

Climatology and Meteorology

Gaivoronskii, I. I.
INVESTIGATION CONDUCTED AT THE CENTRAL AEROLOGICAL OBSERVATORY ON ARTIFICIAL MODIFICATION OF CLOUDS AND FOG (O Issledovaniyakh, Provedennykh v Tsentral'noi Aerologicheskoi Observatorii v Oblasti Iskusstvennykh Vozdeistvii na Oblaka i Tumany) tr. by Harold S. Gold. Jan 62 [21]p. 26 refs.
Order from OTS or SLA $2.60 62-23273

Trans. of Tsentral'naya Aerologicheskaya Observatoriya. Trudy (USSR) 1959, no. 26, p. 39-55.

DESCRIPTORS: *Artificial precipitation, *Clouds, *Fog, Silver compounds, Iodides, Carbon dioxide, Solidified gases, Crystallization.

A literature survey.

Gal'perin, B. M. and Kuchumova, L. S.
THE INFLUENCE OF CLOUDINESS ON ATMOSPHERIC RADIATION [O Vliyanii Oblachnosti na Izluchenie Atmosfery]. [1962] 9p. 14 refs.
Order from OTS or SLA $1.10 62-10982

Trans. of Meteorologiya i Gidrologiya (USSR) 1959, no. 8, p. 19-24.
Another trans. is available from LC or SLA mi$2.40, ph$3.30 as 61-15142, AmMetSoc-T-R-254, Oct 59 [11]p.

DESCRIPTRORS: *Atmosphere, Meteorology, *Clouds, Blackbody radiation, Absorption, Temperature, Humidity.

Close relationships were found between the coefficient (K) characteristic of the influence of variations in cloudiness on the atmospheric radiation and the effective absorption of the mass (M), between K and the temperature of the lower boundary of the cloud, and between K and the terrestrial humidity of the air.

Geodesy

WORK OF THE CENTRAL SCIENTIFIC RESEARCH INSTITUTE OF GEODESY, AERIAL SURVEYING, AND CARTOGRAPHY, 1960, VOL. 139: SELECTED ARTICLES. 12 July 62 [165]p. 81 refs. JPRS: 14455.
Order from OTS or SLA $12.00 62-25987

Trans. of Tsentral'nyi Nauchno-Issledovatel'skii Institut Geodezii, Aeros" emki i Kartografii. Trudy (USSR) 1960, v. 139, p. 3-59, 77-81, 83-87, 89-101, 103-145.

DESCRIPTORS: *Geodesics, *Geodetic astronomy, *Gravity, Earth, Configuration, *Geophysics, Gravity anomalies, Errors, Deflection, Oscillation, Instrumentation, Quartz, Chronographs.

Contents:
Requirements for gravimetric surveying connected with processing astronomical-geodetic and levelling networks, by L. P. Pellinen
Investigation of the accuracy of the formulas of stokes and vening meinesz, by I. M. Tiron
On the present state of theory of studying the shape of the earth's physical surface, by M. I. Yurkina and others
On errors in the interpolation of gravity anomalies and on the accuracy of gravimetric deflections of plumb lines, by L. A. Govorova
Errors in calculation of plumb line deflections in a uniform gravimetric survey, by L. P. Pellinen
Method of accurate determination of the oscillation periods of pendulums, by Yu A. Slivin and M. E. Kheifets
Apparatus of the Central Scientific Research Institute of Geodesy, Aerial Surveying and Cartography for measurement of inclinations and accelerations of a pendulum instrument during marine measurements of the force of gravity, by M. E. Kheifets
Expeditionary quartz chronometer of the TsNIIGAiK Gravimetric Laboratory, by L. A. Gerenburg
On the use of a spring suspension for gravimetric pendulums, by M. E. Kheifets.

Bashlavin, L. A.
NEW METHOD OF THIRD-ORDER LEVELING. [1961] [20]p. ACIC LD-17.
Order from OTS or SLA $1.60 62-15556

Trans. of Moskovskii Institut Inzhenerov Geodezii, Aerofotos"emki i Kartografii. Trudy (USSR) 1957, v. 25, p. 51-59.

DESCRIPTORS: *Geodesics, Geodetic data, Collecting methods, *Leveling rods, Errors.

Belova, N. A.
APPLICATION OF THE NON-FREE FLOATING PRINCIPLE IN LEVELING OF ASTRONOMIC INSTRUMENTS. [1961] [19]p. 6 refs. ACIC LD-18.
Order from OTS or SLA $1.60 62-15557

Trans. of Moskovskii Institut Inzhenerov Geodezii, Aerofotos"emki i Kartografii. Trudy (USSR) 1957, v. 25, p. 67-75.

DESCRIPTORS: *Geodesics, *Geodetic astronomy, Instrumentation, Floating bodies, *Telescopes, Equations of motion.

Kozlov, V. P.
MUTUAL ADJUSTMENTS OF ELEVATION CONTROL NETS OF VARIOUS ORDERS. [1961] [17]p. ACIC LD-16.
Order from OTS or SLA $1.60 62-15555

Trans. of Moskovskii Institut Inzhenerov Geodezii, Aerofotos"emki i Kartografii. Trudy (USSR) 1957, v. 25, p. 43-50.

DESCRIPTORS: *Geodesics, Instrumentation, *Leveling rods, Control, *Geodetic data, Errors, Corrections, Statistical processes.

Selikhanovich, V. G.
CALCULATION OF ERRORS OF INITIAL DATA IN POLYGONOMETRY. [1961] [42]p. 8 refs. ACIC LD-15.
Order from OTS or SLA $4.60 62-15554

Trans. of Moskovskii Institut Inzhenerov Geodezii, Aerofotos"emki i Kartografii. Trudy (USSR) 1957, v. 25, p. 23-42.

DESCRIPTORS: *Geodesics, *Geodetic data, Errors, Determination.

Geography

Konovalov, G. V.
MAIN TYPES OF RELIEF OF QUEEN MAUD LAND. [1962] 4p. (1 fig. omitted).
Order from OTS or SLA $1.10 62-24047

Trans. of Arkticheskii i Antarkticheskii Nauchno-Issledovatel'skii Institut. Informatsii Byulleten' (USSR) 1961, no. 29, p. 27-29.

DESCRIPTORS: *Antarctic regions, Terrain, *Glaciers, Mountains.

Postulka, H.
THE TECHNOLOGY OF PRODUCING GENERAL GEOGRAPHIC MAPS. 19 Apr 61 [13]p. JPRS: 4541.
Order from OTS or SLA $1.60 62-24560

Trans. of Vermessungstechnik (East Germany) 1960, v. 8, no. 9, p. 263-268.

DESCRIPTORS: *Geography, *Maps, Mapping, Standards, Printing.

Wang, Te-chi.
GEOMORPHOLOGICAL TYPE DEMARCATIONS OF LAN-CHOU REGION. Thesis Lan-chou U. (Chinese People's Republic). 20 July 62 [40]p. 11 refs. JPRS: 14539.
Order from OTS or SLA $3.60 62-25969

Trans. of Chung Kuo Ti Ssu Chi Yen Chiu (Chinese People's Republic) 1958, v. 1, no. 2, p. 46-60.

DESCRIPTORS: *Geology, *Geography, Mapping, Mountains, Deltas, Forestry, Economics, Geophysical surveying, *China.

Geology

SOVIET INDUSTRIAL DEVELOPMENT: [SELECTED] TRANSLATIONS ON SOVIET NONFERROUS METALLURGY (32). 25 July 62 [16]p. 8 refs. JPRS: 14587.
Order from OTS or SLA $1.60 62-32056

Trans. of Geologiya Rudnykh Mestorozhdenii (USSR) 1962, no. 2, p. 109-115.

DESCRIPTORS: *Metallurgy, Industrial research, *Gold, Deposits, Sedimentation, Rock, Sulfides, Crystals, Paleoecology.

Contents:
Basic gold deposits at Malyi Khingan; by V. I. Kazanskii
Gold occurrence in sedimentary rock with sulfide phenocrysts in the El'ga River Basin, by S. I. Gavrikov.

Bobrov, V. A.
THE AGE OF TUNGSTEN AND MOLYBDENUM MINERALIZATION OF THE YUGODZYR REGION. 22 Aug 62 [31]p. 17 refs. JPRS: 14918.
Order from OTS or SLA $3.60 62-32552

Trans. from Geologiya Rudnykh Mestorozhdenii (USSR) 1962, no. 3.

DESCRIPTORS: *Tungsten, *Molybdenum, Minerals, Ores, Deposits, Rare earth elements, Geological time, Age, Geological data, Paleoecology.

The Prejurassic (Early Mesozoic) age of tungsten and molybdenum mineralization of the Yugodzyr Region is established in accordance with the age position of red porphyry-type biotite granites, with which it is genetically associated. In other regions of Eastern Mongolia with the Early Mesozoic stage, in addition to this, is associated stannic-tungsten and gold-molybdenum mineralization, pegmatites, etc. The Early Mesozoic rare metals mineralization, evidently, was manifested also in other regions of Eastern Mongolia, in areas of early (Carbon-Permian Period) completion of folding. The absolute age of granitoids, with which is associated rare metals mineralization, makes it possible to assume the presence of Prejurassic mineralization in Transbaykal' for eastern and western parts of it. The presence of Post-Chalk intrusions in the Yugodzyr Region was not confirmed. The intrusions most likely are categorized as Upper Jurassic magmatism, with which in Eastern Mongolia are associated numerous deposits of fluorite, a large group of rare metals, principally tungsten and stannic-tungsten deposits, which were formed somewhat earlier, and ore manifestations of bismuth and mercury. (Author)

Bondarenko, A. P.
ANALYTICAL METHOD OF TREATING FIELD DATA IN SURVEYING BY THE TELLURIC CURRENT METHOD (Analiticheskii Sposob Obrabotki Polevykh Nablyudenii pri Razvedke Metodom Zemnykh Tokov). [1962] [10]p. (foreign text included) 1 ref.
Order from OTS or SLA $1.10 62-14597

Trans. of Akademiya Nauk SSR. Izvestiya. Seriya Geofizicheskaya, 1955, no. 3, p. 267-269.

DESCRIPTORS: *Mapping, Electric currents, *Harmonic analysis, *Geological survey, Data, Geology.

The proposed analytical method of treatment is based on harmonic analysis of the observed gradient pulsations. (Author)

Fesenkova, N. G.
PHOSPHORUS IN SEDIMENTARY ROCKS (Fosfor v Osadochnykh Porodakh). [1962] [8]p. (foreign text included) 2 refs.
Order from OTS or SLA $1.10 62-14567

Trans. of Akademiya Nauk SSSR. Doklady, 1955, v. 105, no. 5, p. 1028-1030.

DESCRIPTORS: Sedimentation, *Rock, *Phosphorus, Determination, *Geochemistry

Ivanova, V. F. and Christianov, V. K.
NEUTRON LOGGING IN EXPLORATION OF COMMERCIAL SOURCES OF BORON (Neitronnyi Karottazh dlya Poiskov Promyshlennykh Kontsentratsii Bora). [1962] [15]p. (foreign text included) 4 refs.
Order from OTS or SLA $1.60 62-14560

Trans. of Geokhimiya (USSR) 1956, no. 2, p. 68-73.

DESCRIPTORS: *Boron, Exploration, *Well logging, Rock, Thermal neutrons, Neutron capture, Geophysical prospecting.

The purpose of our research was the study of the behaviors of the curves of neutron logging in rocks which contain elements with an abnormally large cross-section of the capture of thermal neutrons; our aim was the determination of the possibility of arranging the logging of these elements. We explored the possibility of the determination of the presence of boron in the layer in a case of a layer which is supplied with water, and of the presence of "disturbing" elements, namely of the elements which have cross-sections, that are comparable with the cross-section of the capture of boron. There was determined the length of the sounding borer of the greatest differentiation of the layers which contained boron and which did not contain it. We investigated the influence of the water, which was filling well on the path of the curves of the neutron logging, and there was determined the sensitivity of the method for the different combinations of the layers. (Author)

Josten, Karl-Heinz.
MACERAL ANALYTICAL INVESTIGATION OF (AVERAGE COLUMNAR SECTION) SAMPLES AS AN AID IN THE CORRELATION OF COAL BEDS IN LIMITED (LOCAL) AREA (Mazeralanalytische Untersuchungen an Flözdurchschnittsproben als Hilfsmittel für die Flözgleichstellung in Begrenztem Raum). [1962] [19]p. (foreign text included) 13 refs.
Order from SLA $1.60 62-18019

Trans. of Glückauf (West Germany) 1962, v. 98, no. 2, p. 102-107.

DESCRIPTORS: *Coal, *Minerals, Microstructure, Stratafication, Correlation techniques, *Mining engineering.

From the stratigraphic section at Dorsten (Baldur to Iduna I bed) there were presented from all workable beds two face samples which have been taken on the 2nd and 3rd level of the Franz Haniel Mine 1/2 in a distance of about 700 meters from one another. Meceral analyses were made of these samples. The evaluation of the results made it clearly possible to differentiate the maceral composition of the different beds. The two analyses of the same bed appeared in good agreement. This contrasted definitely with the analyses of two different adjacent beds. In order to make this clear, the affinity relationship was employed, whereby the "comparative relations" of two arbitrarily selected samples are expressed by a single number. (Author)

Khalfin, L. A.
INFORMATION THEORY OF THE INTERPRETATION OF GEOPHYSICAL DATA. [1962] [8]p. 8 refs.
Order from OTS or SLA $1.10 62-16424

Trans. of Akademiya Nauk SSSR. Doklady, 1958, v. 122 [no. 6] p. 1007-1010.
Another trans. is available from CB $5.00

DESCRIPTORS: *Information theory, *Geophysics, Geology, *Geodetic data, Transformations (Mathematics).

A brief account is given of the scheme of the information theory of interpretation of geophysical data. An algorithm of the information theory of interpretation is obtained, which can be realized by means of a computer with a $(\varphi_\rho(r))$ memory. (Author)

Kolomenskii, Nikolai Vasilevich.
METHODS OF ENGINEERING-GEOLOGICAL MAPPING IN THE USSR. 11 Aug 61 [7]p. JPRS: 8704.
Order from OTS or SLA $1.10 62-24547

Trans. of Zeitschrift für Angewandte Geologie (East Germany) 1961, v. 7, no. 3, p. 122-124.

DESCRIPTORS: Engineering, Construction, *Geological survey, *Mapping, Geology.

Lidin, G. D.
ZONAL DISTRIBUTION OF NATURAL GASES IN DONBASS. [1962] 3p. 1 ref.
Order from OTS or SLA $1.10 62-10871

[Condensed] trans. of Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya, 1944, no. 6, p. 337-345.

DESCRIPTORS: *Natural gas, Distribution, Chemical analysis, Geology.

Maksimov, M.
INVESTIGATIONS OF THE INTERRELATIONS OF PRODUCTIVE LEVELS OF MAIKOP LIGHT OIL IN CONNECTION WITH THE GENESIS OF THE BRANCH-SHAPED MAIKOP OIL-POOL. [1962] [117]p. 9 refs.
Order from OTS or SLA $9.60 62-16408

Trans. of Neftyanoe Khozyaistvo (USSR) 1929, no. 11/12, suppl. [p. 813-834.].

DESCRIPTORS: *Petroleum, Sources, *Geology, *Well drilling, Rock.

Mineralogy

Adamov, A. N.
EVALUATION OF THE EFFECTIVENESS OF REGIMES OF DISINTEGRATION OF ROCKS (Otsenka Effektivnosti Rezhimov Razrusheniya Gornykh Porod). [1962] [21]p. (foreign text included) 2 refs.
Order from OTS or SLA $2.60 62-14579

Trans. of Neftyanoe Khozyaistvo (USSR) 1958, v. 36, no. 2, p. 7-13.
Another trans. is available from ATS $9.25 as ATS-38K26R [1958] 9p.

DESCRIPTORS: *Rock, Fracture (Mechanics), Fatigue (Mechanics), Abrasion, Penetration, *Drilling machines, Drills, Effectiveness, Well drilling.

An expression for the specific energy consumption, $A_u = C\frac{nn_s}{h}$ is derived as a criterion for the investigation of regimes of disintegration of rock by cutting bits and of the characteristics of the effectiveness of the work of bits. (Here n is the number of revolutions of the bit, n_s is the number during a period of actual drilling, and h is the penetration of the bit. The coefficient C has the dimensions of $kg\text{-}m/m^2$.) In contemporary drilling practice the proportion of cases in which the normal regime of rock disintegration is established is only about 15%. The predominant regime of rock disintegration is the relatively ineffective one of fatigue disintegration (70-90%). The proportion of the most uneconomical regime of rock disintegration (that of abrasion) is 5 to 15%. Considerable reserves of increase in drilling rates are latent in the development of regimes of disintegration of rock. The most feasible ways to increase the proportion of the most economical and normal regimes of rock disintegration are to increase face pressures and to force the development of drilling regimes.

Amirova, S. A., Pechkovskii, V. V. and Parkacheva, V. V.
ESTUDIOS SOBRE LA TOSTACION DE LA PIRITA CARBONIFERA (Izuchenie Obzhiga Uglistogo Kolchedana) (Studies on Carboniferous Pyrites Roasting) 17p. 7 refs. CID: 62-13. (text in Spanish).
Order from OTS or ETC $1.30 62-26213

Trans. of Zhurnal Prikladnoi Khimii (USSR) 1957, v. 30, no. 12, p. 1735-1740.

DESCRIPTORS: *Pyrites, Oxydation.

Földvari-Vogl, M. and Kliburszky, B.
TESTS FOR DETERMINING THE HEAT OF DECOMPOSITION OF MINERALS. [1962] 16p. 5 refs.
Order from SLA $1.60 62-16593

Trans. of Acta Geologica (Hungary) 1958, v. 5, p. 187-195.

DESCRIPTORS: *Minerals, Decomposition, Pyrolysis, Test methods, Bonding, Calorimetry.

A determination of the heat of decomposition of various minerals was carried out by differential thermal analysis, as well as by means of a microcalorimeter specially designed for this purpose. A theoretical agreement was sought between the respective results obtained by these two methods, and a reciprocal conversion of the results of the two series was attempted. We hope that further development of our calorimetric results will permit us to determine the bonding force of the OH-radicals of the minerals. (Author)

Funk, Herbert.
DISTINGUISHING LOW AND HIGH-MOLECULAR SILICATES BY THEIR SOLUBILITY IN METHANOLIC HYDROCHLORIC ACID. [1962] 4p. 10 refs.
Order from SLA $1.10 62-18013

Trans. of unidentified German language mono. (manuscript) n. p., 1962.

DESCRIPTORS: Minerals, *Silicates, Solubility, Methanols, *Hydrochloric acid.

Physics of the Atmosphere

MAGNETIC IONOSPHERIC PERTURBATIONS, 1959, NO. 1: SELECTED ARTICLES. 1 May 62 [22]p. 40 refs. FTD-TT-61-293.
Order from OTS or SLA $2.60 62-25653

Unedited rough draft trans. of Magnitno-Ionosfernye Vozmushcheniya (USSR) 1959, no. 1, p. 24-29 and 58-63.

DESCRIPTORS: *Ionospheric disturbances, *Magnetic storms, Microstructure, Periodic variations, Magnetic fields.

Contents:
Preliminary results from a study of the microstructure of the most intense magnetic storms by means of the short periodic variations, by V. A. Troitskaya

The excitation of short-period variations of the earth's magnetic field during the sudden commencement of magnetic storms, by A. S. Dvoryashin.

Bovsheverov, V. M., Gurvich, A. S., and Tsvang, L. R.
DIRECT MEASUREMENT OF TURBULENT HEAT FLOW IN THE SURFACE LAYER OF THE ATMOSPHERE. [1962] [9]p. 5 refs. [USASIA] Trans. Log no. 1058.
Order from OTS or SLA $1.10 62-32642

Trans. of Akademiya Nauk SSSR. Doklady, 1959, v. 125, no. 6, p. 1242-1245.

DESCRIPTORS: *Atmosphere, Turbulent flow, *Heat transfer, Measurement.

Danilov, A. D.
ON THE FORMATION OF NO^+ IN THE UPPER ATMOSPHERE (K Voprosu ob Obrazovanii NO^+ v Verkhnei Atmosfere). [1962] [15]p. (foreign text included) 18 refs.
Order from OTS or SLA $1.60 62-14001

Trans. of [Iskusstvennye Sputniki Zemli] (USSR) 1960, [v. 5] p. 60-65.
An abstract trans. is available from LC or SLA mi$1.80, ph$1.80 in 61-15185 AID-60-99, 30 Nov 60 [10]p.; and from LC or SLA mi$2.70, ph$4.80 in 61-15182, AID-60-96, 30 Nov 60 [21]p.

DESCRIPTORS: *Upper atmosphere, Atmosphere, *Nitrogen, *Oxygen, *Ions, Distribution.

The variation of $[NO^+]$ with altitude is calculated. NO^+ ions are distributed in the atmosphere in the form of a layer with a maximum near 200 to 250 km. $[NO^+]$ is proportional to $[O^+]$, $[N_2]$, and inversely proportional to n_e. The variation of the electron concentration in this range of altitudes is slight, therefore, the altitude characteristic of $[O^+]$ and $[N_2]$ has an important role in the $[NO^+]$ distribution. In the range of 100 to 200 km $[N_2]$ decreases as a result of a decrease of ρ, however, $[O^+]$ increases abruptly giving rise to an increase of the $[NO^+]$ concentration with altitude. Above 250 km $[O^+]$ remains approximately constant so that the decrease of $[NO^+]$ is proportional to the decrease of $[N_2]$.

Golitsyn, G. S.
INFLUENCE OF THE EARTH'S MAGNETIC FIELD ON TURBULENCE IN THE LOWER IONOSPHERE. [1962] [14]p. 17 refs. [USASIA] Trans. log no. 1148.
Order from OTS or SLA $1.60 62-32632

Trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Radiofizika (USSR) 1960, v. 3, no. 5, p. 758-764.

DESCRIPTORS: *Ionosphere, Turbulence, *Terrestrial magnetism, Magnetism, Geophysics, Atmosphere.

On the basis of a statistical theory of turbulence, an examination is made of the influence of the earth's magnetic field on the character of ionospheric turbulence. It is shown that for heights of up to about 150 km this influence is negligibly slight. As the altitude increases, the magnetic field must play an ever larger role and, at altitudes of about 200 km, it should substantially suppress turbulence. The conditions are discussed for the existence of developed turbulence in so rarified and non-uniform (in altitude) a medium as the ionosphere. These particularities of the ionosphere, apparently, prevent the development of turbulence at altitudes below 200 km, as a result of which turbulence, in all likelihood, is considerably suppressed at altitudes above 150 km. (Author)

Matyagin, V. S.
ULTRAVIOLET TRANSMISSION COEFFICIENTS OF THE EARTH'S ATMOSPHERE AS MEASURED BY REFERENCE TO STARS (Koeffitsienty Prozrachnosti Zemnoi Atmosfery v Ul'trafiolete Opredelennye po Nekotorym Zvezdam). [1962] [19]p. (foreign text included) 6 refs.
Order from OTS or SLA $1.60 62-14778

Trans. of Akademiya Nauk Kazakhskoi SSR [Alma-Ata]. Astrofizicheskii Institut. Izvestiya, 1959, v. 8, p. 53-58.

DESCRIPTORS: *Earth, *Atmosphere, Optics, *Ultraviolet radiation, Transmission, Stars, Astrophysics.

Photographic observations of rising and setting stars in the ultraviolet region of the spectrum for the determination of the atmospheric transparency by Bouger's method were made with the tube by Fabry. In 1956-57 during 7 nights 21 coefficients of the transparency for 8 stars were determined. The smooth meanings of the coefficients show some dependence on the spectral type of stars. For the star a Lyr of class Ao (active is 373 mμ) the value of the middle coefficient of the transparency is 0.662. (Author)

Vitkevich, V. V.
ON THE DEGREE OF HOMOGENEITY OF A QUIET IONOSPHERE. 21 Apr 61 [6]p. 5 refs. [USASIA] Trans. Log no. 1149.
Order from OTS or SLA $1.10 62-32628

Trans. of #Astronomicheskii Zhurnal (USSR) 1959, v. 36, no. 4, p. 623-625.

DESCRIPTORS: Atmosphere, *Ionosphere, Electrons, Density, Stars, Solar corona, Radio interference, Radio interferometers.

During observations of radio-stars by the radio-interferometric method on the meter wave band, a distinct interferometric pattern is observed in most cases when the ionosphere is not disturbed. This makes possible an estimation of the upper limit of the degree of heterogeneity of the electron plasma of the metagalaxy, galaxy, zodiacal light, and ionophere. The estimation shows, for a quiet ionosphere, that if the size of the heterogeneities is 3 to 5 km, the total number of electrons in these heterogeneities comprises only 0.3 to 0.4% of the total number of electrons in a column of unit cross-section. (Author)

Zevakina, R. A.
THE CONNECTION BETWEEN IONOSPHERIC AND MAGNETIC DISTURBANCES IN THE HIGH LATITUDES. 5 Apr 62 [14]p. 7 refs. FTD-TT-61-308.
Order from OTS or SLA $1.60 62-25665

Unedited rough draft trans. of Magnitno-Ionosfernye Vozmushcheniya (USSR) 1959, no. 1, p. 45-52.

DESCRIPTORS: *Ionospheric disturbances, *Magnetic storms, Diurnal variations, Arctic regions.

The anomalous changes in the ionosphere during magnetic storms and bay disturbances of the geomagnetic field are studied by using observational data (365 storms) from Murmansk for 1954-1957. The high correspondence between anomalous changes in the lower ionosphere and magnetic disturbances in the high latitudes are caused by processes developing in the ionosphere during the invasion of corpuscles, mainly at 100 km. Magnetic disturbances evidently occur as a result of the sharp disruption and change in the system of currents responsible for quiescent diurnal variations.

SOVIET INDUSTRIAL DEVELOPMENT: [SELECTED] TRANSLATIONS ON SOVIET POWER MACHINERY (1). 1 Aug 62 [31]p. JPRS: 14689.
Order from OTS or SLA $3.60 62-32201

Trans. of Byulleten' Tekhniko-Ekonomicheskoi Informatsii (USSR) 1962, no. 4, p. 46-54; and from Pravda, Leningrad (USSR) 1962, 13 May; Izvestiya (USSR) 1962, 16 May.

DESCRIPTORS: *Power supplies, *Steam turbines, *Hydroelectric power systems, Turbine blades, Industrial production, Economics, Laboratories, *Machines

Contents:
Low-power steam turbines, by M. F. Sichikov
Dual-point rotary vane hydro turbine of the Uch-Kurgan GES, by S. P. Mikhanovskii
Kopeks saved -- rubles wasted, by A. Gazaryan
Research difficulties, by N. Kovalev.

Arinyshkin, L. S., Dumov, V. I. and others.
CENTRIFUGAL PUMP WITH AN AUTOMATICALLY CONTROLLED HEAD. 3 Apr 62 [4]p. FTD-TT-62-194.
Order from OTS or SLA $1.10 62-24280

Unedited rough draft trans. of Soviet patent no. 137767, 29 Oct 60 (683765/25).

DESCRIPTORS: *Centrifugal pumps, *Fuel pumps, Nozzles, Design.

A centrifugal pump with an automatically controlled head intended for fuel-pumping systems, for example for aircraft and rockets with a fixed guide nozzle apparatus placed in front of the impeller for swirling the flow, differs in that to obtain a given pump performance the nozzle apparatus is placed on the periphery of the air inlet and made in the form of a ring with helical channels forming the manifold, which is connected by a by-pass with the cavity of the exhaust pipe. (Author)

Gnatkov, M.
PASSENGER BOAT ON HYDROFOILS. [1962] 2p.
Order from OTS or SLA $1.10 62-33151

Trans. of Morskoi Flot (USSR) 1959 [v. 19] no. 11, p. 28.

DESCRIPTORS: *Hydrofoils boats, Boats, Transports, Design.

The proposed boat is designed for service on local passenger lines primarily those in the large resort areas in the Crimea and the Caucasian shores of the Black Sea. The boat has a length of 29 meters, beam at the bilge of 5 meters, and measured at the hydrofoils of 8 meters, a draft of 2.5 meters, and underway on the hydrofoils of 1.2 meters. The displacement is 45 tons, the speed on calm seas of 40 knots; the rating of the engines at this speed 2000 hp, and the passenger capacity, 80 people (it is expected to be possible to increase it to 92). (Extracted)

Voitkovskii, K. F.
DEFORMATIONS OF ICE ARCHES (Deformatsii Ledyanykh Svodov) tr. by Robert Sholiton. Oct 61 [12]p. 1 ref. AmMetSoc-T-R-375.
Order from OTS or SLA $1.60 62-23355

Trans. of mono. Sezonnoe Promerzanie Gruntov i Primenenie L'da dlya Stroitel'nykh Tselei, Moscow, 1957, p. 137-143.

DESCRIPTORS: *Ice, *Structures, Deformation, *Shelters.

Observations were made of the deformations of 6 experimental ice arches to study the stability of structures made of ice and to verify the fundamental design principles previously recommended (1954) for ice structures. Two arches were carved from natural ice formed by the melting of calm water in a reservoir. Their lateral surfaces were parallel to the freezing surface of the water (the axes of the ice crystals in the arches had a horizontal alignment, perpendicular to the lateral surface of the arch). The other 4 arches were frozen in a mold from a mixture of chipped ice, snow, and water. Spans varied from 1 to 10 meters across. Concrete blocks were placed upon all arches, in the middle of their spans. The temperature was kept between -3° and 0.8°C during the observation periods (9 months to 1.5 years). Temperature variations during any month seldom exceeded 1°C. Weights were changed occasionally, but each amount of weight was maintained for at least 2 months. Due to the weights, the arches deformed continuously, without any indication of damage. The rate of deformation for each arch was almost constant, changing only with a change of temperature or weight. Results with the 10-meter span suggest the possibility of building large temporary ice structures with thin roofs in the shapes of arches or cupolas. Such buildings can be used in cold areas as temporary garages, storage compartments, shelters, etc.

Chemical Engineering

PROCESS FOR THE PREPARATION OF ELECTRICAL INSULATING MATERIAL. [1962] 5p.
Order from OTS or SLA $1.10 62-16403

Trans. of Austrian patent 112, 237, issued 11 Feb 29, beginning of pat. term 15 Aug 28 (priority: appl. in Germany from 2 July 27).

DESCRIPTORS: *Insulating materials, *Electric insulation, Cellulose, Preparation.

THE PRODUCTION OF BRIGHT GOLD (Die Herstellung von Glanzgold). [1962] [5]p. (foreign text included).
Order from SLA $1.10 62-10918

Trans. of Sprechsaal (West Germany) 1956, v. 89, no. 1, p. 3-4.

DESCRIPTORS: *Gold alloys, Brightness, Production, Ceramic materials.

SOVIET INDUSTRIAL DEVELOPMENT: [SELECTED] TRANSLATIONS ON SOVIET CHEMICAL INDUSTRY (27). 10 Aug 62 [29]p. JPRS: 14789.
Order from OTS or SLA $2.60 62-32366

Trans. from Kazakhstanskaya Pravda (USSR) 1962, 11 May; Kommunist, Erevan (USSR) 1962, 16 May; Babinskii Rabachii (USSR) 1962, 16 May; Leninskoe Znamya (USSR) 1962, 22 May; Ekonomicheskaya Gazeta (USSR) 1962, no. 13(34) p. 14-15; no. 21(42), p. 14; no. 23(44) p. 34-37, 38, 43.

DESCRIPTORS: *Industrial production, *Chemical industry, Construction, *Asbestos fiber, *Synthetic fibers, Acetates, *Iodine, *Fertilizer, *Petroleum, *Synthetic rubber, Ceramics, Casting, *Coke.

Contents:
Construction of the Dzhetygara Asbestos Combine, by V. Mal'tsev
Production of acetate silk in Kirovokan, by I. Tomchin
Lagging output at the Baku iodine plant, by I. Biryukov
Utilization of reserves at the Voskresensk chemical combine, by B. Vasil'ev
Integration and coordination of petrochemistry, by I. Osadchenko and V. Klimenko
New principles in the construction of plants, by G. Kharlampovich and V. Karmazin
A firm raw-material base for the petrochemical industry, by A. Savel'ev and I. Molochnikov
Improved production of latex at the Voronezh synthetic rubber plant, by G. Rubtsov
Stone castings as protection against corrosion and wear
Construction of the Avdeevka by-product coke plant, by S. Ivanenko.

Baranov, A. V. and Krechetova, T. A.
COMPARATIVE EVALUATION OF METHODS FOR PREPARATION OF NITRIC ACID FROM NITROGEN OXIDES. I. KINETICS OF BUBBLE CAP ABSORPTION, tr. by Bertha P. Klenova. 19 Feb 62, 12p. 6 refs. TVA-3982.
Order from OTS or SLA $1.60 62-24466

Trans. of Khim[iko]-Tekhnol[ogicheskii] Inst[itut] Dnepropetrovsk. Trudy (USSR) 1958, v. 6, p. 99-109.

DESCRIPTORS: *Nitric acid, *Nitrogen compounds, Oxides, Preparation, Towers (Chemistry), Bubbles, Absorption, Reaction kinetics.

The method of the rising bubble was applied to the study of the relation of the coefficient of mass transfer to temperature, rates of gas and liquid flow, depth of bubbling layer, diameter of nozzle or gas bubble, and concentrations of nitric acid and of nitrogen dioxide in the gas. An equation which summarizes the results of the investigation was derived for determining the coefficient of mass transfer. The effects of the depth of the bubbling layer and of the gas bubble diameter on the coefficient of mass transfer show that the existing bubbling tower designs do not assure optimal conditions. From the results of the study new ways may be indicated for the design of bubble-cap towers which during absorption assure the repeated formation of gas bubbles of optimal dimensions and afford the use of equipment operating at atmospheric pressure. (Author)

Baranov, A. V.
PHYSICOCHEMICAL GROUNDS AND WAYS OF INTENSIFYING THE PRODUCTION OF NITRIC ACID, PT. I, tr. by Bertha P. Klenova. 19 July 61, 11p. 6 refs. TVA-3916.
Order from OTS or SLA $1.60 62-24457

Trans. of Khim[iko]-Tekhnol[ogicheskii] Inst[itut] Dnepropetrovsk. Trudy (USSR) 1955, v. 4, p. 25-34.

DESCRIPTORS: *Nitric acid, Oxides, Production, Towers (Chemistry), Absorption, Temperature, Cooling, *Physical chemistry.

The effect of temperature on the conversion of oxides of nitrogen and the rate absorption coefficient were investigated at various rates of gas flow and various nitric acid concentrations. The effectiveness of cooling was demonstrated. Concepts regarding the optimum temperature were expressed. (Author)

Lengyel, P.
THE DEFIBERING CHARACTERISTICS OF VARIOUS SEMIPULPS. Mar 62, 7p. (figs. tables omitted) 13 refs.
Order from SLA $1.10 62-16507

Trans. of Zellstoff und Papier (Germany) 1962, v. 11, no. 3, p. 89-94.

DESCRIPTORS: *Wood pulp fibers, *Cellulose, *Separation, Paper, Production, *Bonding, Lignin, *Sulfate pulp, Chemical reactions, Orabinose, Xylose

The defibering and beating properties of different semipulps can be represented in linear form with the aid of scale transformation. Such representation makes it possible to investigate the behaviour of different raw materials under different cooking conditions with regard to defibrability. Furthermore, it is shown that with extensive delignification a product can be obtained which does not as yet disintegrate into fibres and which requires considerable energy for defibration. Acid hydrolysis facilitates defibration. This can be explained by the fact that during hydrolysis of the hemicelluloses arabinose is split off, since a relatively large amount of arabinose can be shown to be present in the hydrolysate or by the fact that during treatment the hemicelluloses are partially degraded, since on further treatment of the hydrolysate with concentrated acid significant amounts of xylose are formed. (Author)

Minematsu, Yoichi and Yamada, Taizo.
PHOTODEGRADATION OF POLYVINYL CHLORIDE AND THE EFFECT OF STABILIZERS. Rept. no. 11 of the Effect of Light on Polyvinyl Chloride. [1962] 15p. 16 refs.
Order from SLA $1.60 62-10701

Trans. of Kobunshi Kagaku (Japan) 1961, v. 18, no. 191, p. 175-182.

DESCRIPTORS: *Vinyl chlorides, Polymers, *Photolysis, Stabilization.

The effect of stabilizers on the weatherometer photodegradation (in air) of PVC was studied. In order to dissolve and disperse the stabilizers uniformly in the PVC by the solution method, chlorostearates and 2-ethylhexanoates were compounded as the stabilizers, and dibutyl Sn system stabilizers too were used. By this means, the influence of thermal decomposition by roll milling was avoided. By measuring the viscosity of the cyclohexanone solution, the spectrophotometric absorption in the ultraviolet ~ infrared regions, and the specific gravity changes of the weatherometer-irradiated products, it became clear that stabilizers of the Cd, Ba, and Sn system lower the oxidation velocity of PVC. Stabilization effect could not be observed by Zn 2-ethylhexanoate alone. A specimen containing Fe 2-ethylhexanoate underwent degradation similar to thermal decomposition. (Author)

Tsumori, Hiroshi, Nakajima, Junichi and others.
AUTOMATIC CONTROL OF pH IN SODIUM GLUCONATE PRODUCTION FROM GLUCOSE BY ASP. NIGER. [1962] 11p. (5 figs. 2 tables omitted) 9 refs.
Order from SLA $1.60 62-14603

Trans. of [Hakko Kogaku Zasshi] (Japan) 1961, v. 39, no. 6, p. 328-[332].

DESCRIPTORS: *Gluconates, *Hydrogen ion concentration, *Sodium compounds, *Fermentation, *Glucose, *Molds.

An automatic pH control system was employed in the production of gluconic acid by fermentation of glucose in the presence of Asp. niger. The pH of the fermentation solution could be maintained at 6.5 ± 0.05 throughout the fermentation period. The system possessed the following features. The solution was circulated by air lift through a side tube and the pH of the solution was determined with electrodes inserted into the side tube. An electro-pneumatic converter possessing an "on-off" action was constructed. It consisted of a metal vane, which was attached to the movable armature of a microswitch relay, and a nozzle positioned under the vane. The device was used in conjunction with an automatic pH indicator-recorder. To control the flow of a sodium hydroxide solution, a capillary flow-valve was employed. There was no leakage of the alkali solution through the valve. (Author)

Schmidt, Boris E.
BRIGHT AND MAT GOLD IN THE SCREENING PROCESS (Glanz- und Poliergold-Dekore im Siebdruckverfahren). [1962] [5]p. (foreign text included) 1 ref.
Order from SLA $1.10 62-10943

Trans. of Sprechsaal (West Germany) 1956, v. 89, no. 14, p. 329-330.

DESCRIPTORS: *Gold alloys, Brightness, *Gold compounds, Deposits, Printing, Lithography, Cermets Chemical reactions, Textile screens.

Schwank, Günther.
BUNSEN BURNER SECURED AGAINST FLASHBACK. [1962] 18p. (figs. omitted) 7 refs.
Order from SLA $1.60 62-16453

Trans. of GWF; [das Gas-und Wasserfach] (West Germany) 1948, v. 89, no. 12, p. 367-371.

DESCRIPTORS: *Gas burners, Gases, Mixtures, Injection, Nozzles, Velocity, *Laboratory equipment.

A tendency to flashback is produced not only in consequence of the flame-propagation velocity of the mixture, but primarily also by the type of movement and the heat equalization of the gas in the burner. Formulas serving to ascertain the dimensions of the burner have but a limited range of application. The goal of producing burners with a high air-volume in the mixture and a wide range of controllability and simultaneously secure against flashback, is in the main achieved by (1) supercooling the mixture in the exhaust ports (of the burner tip) which should be as small as possible, and very numerous, and (2) relatively narrow injectors with properly centered, conical gas jet. (Author)

Uchikawa, H. and Takagi, S
ELECTRON MICROSCOPE STUDIES OF COMPLETELY HYDRATED CLINKER COMPONENTS. [1962] 7p. (18 figs. omitted) 8 refs.
Order from SLA $1.10 62-14215

Trans. of Zement-Kalk-Gips (West Germany) 1961, v. 14, no. 4, p. 153-158.

DESCRIPTORS: *Electron microscopes, *Cements, Water, Ball mills, Hydrates, Gypsum, Synthesis.

The surface and internal structure of completely hydrated and hardened cement clinker components, and their mixtures with and without gypsum, were investigated by electron-microscopic methods using ultra-microtome sections. The samples were hydrated in a ball mill at 20°C with a water/cement ratio of 0.8. As a result of these experiments the process of hardening and strength development can be explained in terms of: the formation of a three-dimensional network of calcium hydroxide, the bonding of fibres and layers of the calcium silicate hydrates by van der Waals forces and electrostatic forces, and the interlocking of the calcium silicate hydrates and the calcium hydroxide by coalescence of similarly oriented lattices with chemical cross-connections. (Author)

Wührer, J.
SCIENTIFIC AND PROCESSING PROBLEMS IN THE BURNING OF PORTLAND CEMENT CLINKER FROM QUICKLIME. [1962] 34p. 9 refs.
Order from SLA $3.60 62-14300

Trans. of Zement-Kalk-Gips (West Germany) 1960, v. 13, no. 5, p. 181-192.

DESCRIPTORS: *Calcium compounds, Oxides, *Cements, Combustion, Processing.

Civil Engineering

DEPARTMENTAL STANDARDS AND RATES FOR CONSTRUCTION, INSTALLATION, AND REPAIR-CONSTRUCTION WORK, 1960. 19 July 62 [168]p. JPRS: 14525.
Order from OTS or SLA $12.00 62-25965

Trans. of monos. Vedomstvennye Normy i Rastsenki na Stroitel'nye Montazhnye i Remontno-Stroitel'nye Raboty 1960, Moscow, 1960, Collections V-14, 14p. and V-42, 121p.

DESCRIPTORS: Standards, *Construction, Installation, Maintenance, Construction materials industry, Costs, Structures, Steel, *Radio towers, *Antenna masts, Communication equipment, Radio equipment, Television equipment.

Contents:
Installation of radio masts and radio towers
Installing communication, radio and television equipment.

SOVIET INDUSTRIAL DEVELOPMENT: [SELECTED] TRANSLATIONS ON SOVIET CONSTRUCTION MACHINERY (15). 6 Aug 62 [28]p. JPRS: 14733.
Order from OTS or SLA $2.60 62-32214

Trans. of Stroitel'nye i Dorozhnye Mashiny (USSR) 1962 [v. 7] no. 5, p. 1-11 (p. 3-11 excerpts only).

DESCRIPTORS: *Industrial production, *Construction, Machines, Conferences, *Road building equipment, Standardization, *Earth moving equipment, *Hoists.

Contents:
Conference on Construction and Road Machinery
New road construction machinery and standardization, by A. A. Vasil'ev
Development and adoption of standard construction and road machinery and equipment for the building industry, by D. K. Simachev
A standardized series of universal single-bucket excavators and self-propelled boom cranes, by V. A. Ryakhin and others.

Djuric, M. and Radenkovic, D.
THE BUCKLING OF ARCHES WITH HINGED ENDS [AND] ON THE BUCKLING OF A CIRCULAR ARCH UNDER VERTICAL LOADS, tr. by Mikola Franc. 1961, 11p. 3 refs. PL-480 Agr.
Order from OTS $0.50 60-21707

Trans. of [Srpska Akademija Nauka]. Matematicki Institut. Publications (Yugoslavia) 1953, v. 5, p. 45-52 and S[rpska] A[kademija] N[auka]. Zbornik Radova (Yugoslavia) 1952, v. 24 [Mashinski Institut no. 4] p. 125-128.

DESCRIPTORS: *Structures, *Buckling, Load distribution, Deformation.

Dutron, P. and Cloes, R.
EFFECT OF WATER AND COMPACTION ON THE STRENGTH OF SOIL CEMENT MIXES. [1962] 4p.
Order from SLA $1.10 62-18014

Trans. of mono. Congress of the Permanent Association of Belgian Road Congresses (no. 9) Liege, 1959. [Proceedings] p. 35-39.

DESCRIPTORS: *Water, *Soils, *Cements, Mixtures, *Pavements, Construction, Moisture, Construction materials industry, *Stabilization.

Heidenstam, Erik Johan von.
PROCESS AND DEVICE FOR ERECTING BUILDINGS, tr. by J. B. 15 Feb 62, 24p. (19 figs. omitted).
Order from OTS or SLA $1.60 62-23308

Trans. of French patent 1,108787, gr. 7, cl. 1, internat. cl. E 04b, appl. 30 June 54, granted 14 Sep 55, pub. 17 Jan 56 (patent appl. filed in Sweden 30 June 53 in the name of the applicant).

DESCRIPTORS: Structures, *Buildings, Construction, Floors, Hoists, *Civil engineering

The invention is a process for erecting a building (or a building section) of several stories, the floorings prepared on the ground being preferably capable of running continuously on several supports (columns and/or walls) and having a surface corresponding to a plan cross section of the building or of a portion of the building, or to a large part of such cross section. and being raised to their final position by lifting devices. The process is characterized in that one or several relatively small portions of the plan cross section of the building or building section are constructed entirely or partially before a flooring or several floorings have been set in their place, these portions first erected constituting tower-shaped structures against which the flooring or floorings are supported directly or indirectly remaining in horizontal position, so that the lateral forces acting on the floorings and/or elements attached to the floorings during the erection, especially during the raising of a flooring, are transmitted as lateral forces acting on the towers.

Lalande, M.
THE VARIETY OF APPLICATIONS OF PRESTRESSED CONCRETE. 2 Feb 55 [102]p.
Order from SLA $9.10 61-20093

Trans. of reprint based on extracts from Travaux (France) 1949, Jan, p. 2-22 and Feb, p. 47-64.

DESCRIPTORS: Structures, Construction, *Concrete, *Reinforced concrete, Reinforcing materials, *Reinforcing steel, Jacks (Mechanics) Wire.

Lessig, N. N.
DETERMINATION OF THE LOAD-CARRYING CAPACITY OF REINFORCED CONCRETE ELEMENTS WITH RECTANGULAR CROSS-SECTION UNDER SIMULTANEOUS ACTION OF FLEXURE AND TORSION. [1961] [11]p.
Order from OTS or SLA $1.60 62-14253

Trans. of Beton i Zhlezobeton (USSR) 1959, no. 3, p. 109-113.

DESCRIPTORS: *Reinforced concrete, Load distribution, Failure (Mechanics), Determination, Design, Torsion bars, Plasticity, Flexible couplings, *Structures.

Experiments permitted a determination of the mode of failure of rectangular reinforced concrete elements working in torsion and flexure, and derivation of design formulas for the determination of their load-carrying capacity. They also permitted a comparison of the results computed according to these formulas with the actual load-bearing capacity determined on test specimens. The design formulas are derived for cases of failure produced by yielding of the reinforcement bars intersecting the crack along which failure takes place. Such failures are distinguished by the opening of one or several cracks along the three surfaces of the element. The compression zone is located along the fourth side (vertical or horizontal); the neutral axis is somewhat inclined to the axis of the element, except in the case of simple flexure, when it is perpendicular to the axis. Thus failure of a reinforced concrete element under the combined action of flexure and torsion, as well as of pure torsion, takes place along some non-plane section; this makes possible the two following positions of the neutral axis or axis of a plastic hinge with respect to the plane of flexure (it is assumed that flexure takes place in a vertical plane). (Author)

Rother, H.
THE BEHAVIOR OF PRESTRESSED CONCRETE UNDER FIRE. [1962] 7 refs.
Order from SLA $2.60 62-18007

Trans. of VFDB Zeitschrift (West Germany) 1961 [v. 10, no. 4] p. 138-146.

DESCRIPTORS: *Concrete, Structures, *Reinforced concrete, Construction materials industry, Behavior, *Fires, *Reinforcing steel, Tests, Tensile properties, Stresses, Standards, Load distribution.

This review shows that a fire rating (appraisal) of prestressed concrete structural members is difficult to establish, that results of experience with reinforced concrete cannot form the basis of such an appraisal, and that an extensive concern with this problem is in order. The difficulty is compounded by the fact that hardly any usable background information is available. (Author)

Electrical and Electronic Engineering

ABSTRACTS FROM EAST EUROPEAN ELECTRONICS JOURNALS (2). 27 Nov 61 [54]p. JPRS: 11280.
Order from OTS or SLA $5.60 62-13671

Consists of brief descriptive abstracts of articles published in selected 1961 issues of the East European journals, Nachrichtentechnik (East Germany), Przeglad Telekomunikacjny (Poland), and Telekomunikacije (Yugoslavia).

DESCRIPTORS: Abstracting, *Electronics, *Electronic equipment, Literature, East Germany, Poland, Yugoslavia.

ABSTRACTS FROM EAST EUROPEAN ELECTRONICS JOURNALS NO. 3. 6 Feb 62 [57]p. JPRS: 12392.
Order from OTS or SLA $5.60 62-15945

Consists of brief descriptive abstracts of articles published in selected 1961 issues of the East European journals, Slaboproudy Obzor, Sdelovaci Technika, Nachrichtentechnik, Magyar Hiradastechnika, and Przeglad Telekomunikacyjny.

DESCRIPTORS: Abstracting, *Electronics, *Electronic equipment, Literature, Czechoslovakia, East Germany, Hungary, Poland.

ABSTRACTS FROM EAST EUROPEAN ELECTRONICS JOURNALS NO. 4. 3 Apr 62 [117]p. JPRS: 13336.
Order from OTS or SLA $9.60 62-23755

Consists of brief descriptive abstracts of articles published in selected 1961-62 issues of the East European journals, Sdelovaci Technika, Slaboproudy Obzor, and Nachrichtentechnik.

DESCRIPTORS: Abstracting, *Electronics, *Electronic equipment, Literature, Czechoslovakia, East Germany, Hungary, Poland.

ABSTRACTS FROM EAST EUROPEAN ELECTRONICS JOURNALS NO. 5. 27 Apr 62 [59]p. JPRS: 13570.
Order from OTS or SLA $5.60 62-24243

Consists of brief descriptive abstracts of articles published in 1961-62 issues of the East European journals, Sdelovaci Technika, Slaboproudy Obzor, Magyar Hiradastechnika, and Telecomunicatii.

DESCRIPTORS: Abstracting, *Electronics, *Electronic equipment, Literature, Czechoslovakia, Hungary, Rumania.

ABSTRACTS FROM EAST EUROPEAN ELECTRONICS JOURNALS (6). 21 May 62, 17p. JPRS: 13817.
Order from OTS $0.50 62-11665

Consists of brief descriptive abstracts of articles published in selected 1962 issues of the East European journals, Nachrichtentechnik (East Germany), Hiradastechnika (Hungary), and Przeglad Telekomunikacyjny (Poland).

DESCRIPTORS: Abstracting, *Electronics, *Electronic equipment, Literature, East Germany, Hungary, Poland.

ABSTRACTS FROM EAST EUROPEAN ELECTRONICS JOURNALS NO. 7. 2 July 62 [27]p. JPRS: 14323.
Order from OTS or SLA $2.60 62-25617

Consists of brief descriptive abstracts of articles published in selected 1962 issues of the East European journals, Nachrichtehtechnik, Hiradastechnica, Przeglad Telekomunikacyjny, and Telecomunícatii.

DESCRIPTORS: Abstracting, *Electronics, *Electronic equipment, Literature, East Germany, Hungary, Poland, Rumania.

TRANSISTOR AMPLIFIER FOR AUTOMATICALLY ADJUSTING SENSITIVITY. 13 Sep 62.
Order from WBI $2.00

Trans. of main claims, including drawings, of Japanese patent publication no. 37-11910, by N. B. Phillips Fruiranpenfabriken, Holland, pub. 24 Aug 62.

DESCRIPTORS: *Transistor amplifiers, Amplifiers, Design, Sensitivity.

TRANSISTOR HIGH FREQUENCY OSCILLATOR OF GROUNDED EMITTER-COLLECTOR TUNED TYPE. 13 Sep 62.
Order from WBI $2.00

Trans. of main claims, including drawings, of utility model publication no. 37-20667, by Japan Victor Co., pub. 10 Aug 62.

DESCRIPTORS: *Transistors, High frequency, *Oscillators, Tuned circuits, Design.

TRISTABLE CIRCUIT USING TRANSISTORS. 13 Sep 62.
Order from WBI $2.00

Trans. of main claims, including drawings, of Japanese patent publication no. 37-12202, by Nihon Electronic Instruments, pub. 28 Aug 62.

DESCRIPTORS: *Circuits, Electronic circuits, *Transistors.

TWO FREQUENCY SELECTIVE AMPLIFIER. 13 Sep 62.
Order from WBI $2.00

Trans. of main claims, including drawings, of Japanese patent publication no. 37-11916 by Sony Corp., pub. 24 Aug 62.

DESCRIPTORS: *Amplifiers, Design, Frequency.

Arnaud, M.
DESIGN AND DEVELOPMENT OF AN APPARATUS FOR TESTING GUNS WITH AUTOMATIC RECORDING OF CURRENT DENSITY. [1962] [12]p.
Order from SLA $1.60 62-14841

Trans. of C[ompagnie] F[rançaise] T[homson]-H[ouston]. Revue Technique: [Electronique] 1960, no. 32, p. 73-82.

DESCRIPTORS: *Electron guns, *Test equipment, Design, Electron beams.

Barthelemy, R.
NEW, DIRECT-READING HENRYMETER. [1962] 2p.
Order from SLA $1.10 62-18152

Trans. of Academie des Sciences, Paris. Comptes Rendus (France) 1945, v. 220, 19 Feb, p. 242-243 (pub. by Gauthier-Villars et Cie., Paris).

DESCRIPTORS: *Inductance, Measurement, Meters, Design, Resistance.

Bertinov, A. I. and Riznik, G. A.
DESIGNING DIRECT-CURRENT MOTORS AND GENERATORS FOR AIRCRAFT (SELECTED PARTS). 20 June 62 [127]p. FTD-TT-62-173.
Order from OTS or SLA $10.10 62-32280

Unedited rough draft trans. of mono. Proektirovanie Aviatsionnykh Elektricheskikh Mashin Postornnogo Toka, Moscow, 1958, p. 10-13, 85-89, 266-278, 316-398.

DESCRIPTORS: *Electric motors, *Generators, Direct current, Armatures, Carbon brushes, *Electrical equipment, *Aircraft equipment, Electromagnetic properties, *Bearings, Lubrication, Air cooled, Heat transfer.

Contents:
Electromagnetic calculations for DC aircraft electrical machinery

Basic elements of design and mechanical calculations
Cooling and heating electrical machines
Examples of calculations for DC aircraft electrical motors and generators.

Bloch-Chaude, Odile.
SURVEY OF RECENT DEVELOPMENTS IN FUEL CELLS. [1962] 19p. 43 refs.
Order from SLA $1.60 62-18065

Trans. of Société Chimique de France. Bulletin, 1961 [no. 12] p. 2447-2452.

DESCRIPTORS: *Fuel cells, Hydrogen, Hydrocarbons, *Storage batteries, *Electrochemistry, Electrolysis, Power supplies.

Bykhovskii, D. L. and Kaplan, M. I.
NUEVOS ESQUEMAS PARA RECTIFICADORES DE SOLDADURA (Novye Skhemy Svarochnykh Vypryamitelei) (New Schematisations for Welding Rectifiers). 16p. CID: 62-57. (text in Spanish).
Order from OTS or ETC $1.25 62-26257

Trans. of Svarochnoe Proizvodstvo (USSR) 1957, no. 1, p. 1-4.

DESCRIPTORS: *Welding, Rectifiers.

Chardon, G.
INSULATION CONTROLS. 12 Aug 48, 11p. (figs. refs omitted).
Order from SLA $1.60 62-16940

Trans. of Câbles et Transmission (France) 1947, v. 1, Oct, p. 261-270.

DESCRIPTORS: *Telephone cables, *Electric insulation, Control, Maintenance.

Enomoto, Gado.
DOUBLE CATHODE DIODE CONSTRUCTION. 13 Sep 62.
Order from WBI $2.00

Trans. of main claims, including drawings, of utility model publication no. 37-20009, pub. 6 Aug 62.

DESCRIPTORS: Cathodes (Electron tubes), Diodes, Construction. *Twin diodes.

Friza, R.
NEW TESTING APPARATUS FOR ENAMELED WIRE. 9 Oct 48, 4p. (figs. refs. omitted).
Order from SLA $1.10 62-16982

Trans. of Elektrotech[nik] und Maschinenbau (Austria) 1948, v. 65, no. 1/2, p. 14-17.

DESCRIPTORS: Test equipment, *Wire, *Enamel coatings, Insulating materials, Electric insulation.

Genin, G.
THE TEFLON RESINS AND THEIR APPLICATION IN THE ELECTRICAL INDUSTRY. 18 Feb 49, 11p. (figs. tables refs. omitted).
Order from SLA $1.60 62-16977

Trans. of Électricité (France) 1947 [v. 31, no. 5] p. 105-110.

DESCRIPTORS: *Ethylenes, *Fluorides, *Polymers, *Resins, Electrical industry.

Goldstein, H.
THE TIME CONSTANT OF A MAGNETIC AMPLIFIER. 9 Jan 52, 3p. (figs. refs. formulae omitted).
Order from SLA $1.10 62-16971

Trans. of [Elektronische Rundschau] (Germany) 1951 [v. 5, no. 2] p. 76-78.

DESCRIPTORS: *Magnetic amplifiers, Amplifiers, Time lag theory.

Gordeev, D. K.
PARTICULARIDADES DE LA EXPLOTACION DE TRANSFORMADORES DE FUERZA CON PIRANOL A PRUEBA DE EXPLOSIONES (Osobennosti Ekspluatatsii Vryvobezopasnykh Piranolovykh Silovykh Transformatorov) (Details on the Operation of Explosion-proof Power Transformers with Pyranol). 21 p. CID: 62-96. (text in Spanish).
Order from OTS or ETC $1.50 62-26296

Trans. of Energeticheskii Byulleten' (USSR) 1953, no. 7, p. 18-25.

DESCRIPTORS: *Transformers.

Kolenko, E. A., Tauber, A. G. and others.
THERMOELEKTRISCHE HOCHVAKUUMFALLE FÜR DIE PUMPE N-2. (A Thermoelectric High-vacuum Trap for Pump N-2). (text in German).
Order from T. I. B. $1.55

Trans. of mono. Fizika Tverdogo Tela: Sbornik Statei (Solid State Physics: Collection of Articles) v. 1 [Moscow] 1959, p. 282-284.

DESCRIPTORS: *High vacuum valves, *Pumps.

Leontev, L.
THE REGION OF APPLICABILITY OF THE EXPONENTIAL LAW IN THE DETERMINATION OF RELIABILITY. 16 Mar 62 [8]p. 2 refs. JPRS: 13107.
Order from OTS or SLA $1.10 62-23605

Trans. of Akademiya Nauk Latviiskoi SSR [Riga]. Izvestiya, 1961, no. 12(173) p. 19-24

DESCRIPTORS: *Electronic equipment, Failure (Mechanics), *Reliability, Determination, Special functions.

These relationships derived for the determination of the limit of validity of the exponential law of failure

distribution and for the determination of the mean operating time permit a more rational application of the components of electronic apparatus from the point of view of a fuller utilization of their service life in order to provide a high level of reliability of the system as a whole. (Author)

Miura, Hiroyasu.
SOME NOTES ON ANTI-SIDETONE TELEPHONE CIRCUITS. [1962] 24p. 4 refs.
Order from SLA $2.60 62-18093

Trans. of [Denki Tsushin Gakkai Zasshi] (Japan) 1961, v. 44, no. 9, p. 1328-1336.

DESCRIPTORS: *Communication equipment, *Telephones, Circuits, Boosters, Impedance bridges.

Starting from the basic circuit, an analysis is presented of the bridge and booster circuits in the case of elements having complex impedance. By the analyses the design for an anti-sidetone telephone circuit became much more precise than in the case wherein all the elements were considered to be pure resistances.

Miyake, Yasumoto and Ando, Tokujiro.
FREQUENCY STABLE TRANSISTOR CRYSTAL OSCILLATOR CIRCUIT. 13 Sep 62.
Order from WBI $2.00

Trans. of main claims, including drawings, of Japanese patent publication no. 37-11907, pub. 24 Aug 62.

DESCRIPTORS: Transistors, Crystal oscillators, *Oscillator circuits, Circuits, Frequency.

Miyake, Yasumoto.
JUNCTION TRANSISTOR CRYSTALL OSCILLATOR CIRCUIT. 13 Sep 62.
Order from WBI $2.00

Trans. of main claims, including drawings, of Japanese patent publication no. 37-11906, pub. 24 Aug 62.

DESCRIPTORS: Transistors, Crystal oscillators, *Oscillator circuits, Circuits.

Niimi, T., Hayashi, T., and Sunohara, Y.
THE FIELD EFFECT TRANSISTOR AS A NEGATIVE RESISTANCE DEVICE. [1962] 15p. 10 refs.
Order from SLA $1.60 62-18096

Trans. of Denki Tsushin Gakkai Zasshi (Japan) 1961, v. 44, no. 5, p. 811-814.

DESCRIPTORS: *Transistors, Resistance, *Switches, Field emission, Design, Manufacturing methods, *Negative resistance circuits.

This article deals with the structure of one type of field effect transistor as a negative resistance device; its principles of operation, method of design and production, the basic properties of the finished product, its advantages and uses. This structure sho shows that it is identical with the very narrow base of an alloy-type transistor equipped with a ring base. The producer mechanism of the negative resistance characteristics which appear in the gate circuit, is explained according to G. C. Dacey's theory, and again by the use of an equivalent circuit. A general design formula is introduced for this negative resistance device, based on an analysis of its geometrical shape and electrical characteristics. A concrete production method is described, and the static characteristics of the finished article are discussed. Finally it is explained why this device is particularly suitable for use as a double-safety switch element. (Author)

Odier, J.
INSULATION OF ALUMINUM CONDUCTORS BY ANODIC OXIDATION. [1962] 23p.
Order from SLA $2.60 62-18094

Trans. of Revue de l'Aluminium (France) 1947, v. 24, p. 259-264.

DESCRIPTORS: *Conductors, *Aluminum, *Electric insulation, Insulating materials, *Oxidation, Deformation, *Anodes (Electrolytic cell).

Patrunov, V. G.
THEORY OF MAGNETIC RECORDING OF IMAGES. [1962] [15]p. (5 figs. 9 formulas, 1 table omitted) 12 refs.
Order from OTS or SLA $1.60 62-14208

Trans. of Elektrosvyaz' (USSR) 1959, no. 12, p. 35-42.

DESCRIPTORS: *Ferromagnetic materials, Powders, *Magnetic recording systems, Theory.

Examination of forces acting on particle of ferromagnetic powder, by means of which the magnetic recording is visualized. There are also evaluated the technological problems and materials for recording images and obtaining impressions on paper. (Author)

Picquendar, J. E. and Cahen, O.
THE DESIGN AND DEVELOPMENT OF AN ELECTROLYTIC TANK FOR AUTOMATIC TRACING OF EQUIPOTENTIALS. [1962] [22]p.
Order from SLA $2.60 62-14840

Trans. of C[ompagnie] F[rançaise] T[homson]-H[ouston]. Revue Technique: [Electronique] 1960, no. 32, p. 59-72.

DESCRIPTORS: *Electrolytes, Tanks, *Test equipment, Design, Electrodes, Potentiometers, Electronic equipment.

Pilsater, B. V.
SYSTEMATIC REPORTING OF FAILURES IN EQUIPMENT AN AID IN RELIABILITY TECHNIQUE. [1962] 7p. (8 figs. omitted). 6 refs.
Order from SLA $1.10 62-18086

Trans. of Elteknik (Sweden) 1961, v. 4, no. 7, p. 127-131.

DESCRIPTORS: *Electronic equipment, Failure (Mechanics), *Reliability, Air force equipment, Sweden.

An account is given of a system in use by the Swedish air force for some years. An example is also given of the evaluation of the data collected.

Saito, Nobuji.
A COUPLED TRANSMISSION-LINE FILTER (DESIGN METHOD BY EXTRACTION OF COUPLED 2-WIRE LINES). [1962] 12p. 3 refs.
Order from SLA $1.60 62-14789

Trans. of [Denki Tsushin Gakkai Zasshi] (Japan) 1961, v. 44, no. 7, p. 1036-1040.

DESCRIPTORS: *Transmission lines, *Coaxial filters, Design.

Consideration is given to the design of a coupled transmission-line filter, with distributed coupled transmission lines as its main element. Symmetrical and reciprocal circuits are explained by the method of extracting coupled transmission lines from the parameters of a given circuit. There is no need to devise a special function for the characteristic approximate function; it can be found summarily in the same way as in the case of a concentrated-constant circuit. The same method, as it is, can be used for the design of strip-line filters. It is shown by several practical examples that there is no error in the theory. (Author)

Saito, Nobuji.
RICHARDS' THEOREM EXPANDED INTO A TWO-PAIR TERMINAL NETWORK. [1962] 10p. 6 refs.
Order from SLA $1.10 62-14790

Trans. of [Denki Tsushin Gakkai Zasshi] (Japan) 1961, v. 44, no. 7, p. 1033-1036.

DESCRIPTORS: *Electrical networks, Synthesis, Functions, Matrix algebra, Theory.

Richards' theorem is famous as introducing a key to Bott and Duffin's method for the synthesis of a two-terminal network without the use of mutual inductance. The present paper proves that by treating the expansion of Richards' theorem into a four-terminal network with a matrix, an almost identical theorem is obtained. On the basis of this proof a method solving a four-terminal network is proposed. This is an important step in the synthesis of a coupled-line wave filter, which is a kind of distributed-constant circuit. It thus becomes possible to extract coupled 2-wire transmission lines. (Author)

Schienemann, R.
NUMBER OF POSSIBLE LINKS IN A 7 Gc DIRECTIONAL SYSTEM. [1962] 24p. 5 refs.
Order from SLA $2.60 62-18095

Trans. of Telefunken-Zeitung (West Germany) 1961, v. 34, no. 133, p. 221-231.

DESCRIPTORS: *Direction finding, *Radio equipment, Antennas, Interference, Frequency, Frequency modulation, Oscillation.

Schneider, Hellmut.
THE ADVANTAGES OF THE 20 mA SIGNAL FOR ELECTRICAL MEASURING TRANSDUCERS. [1962] 7p. (2 figs. omitted).
Order from SLA $1.10 62-14238

Trans. of mono. from International Conference "Instruments and Measurements" (no. 5) [held at] Stockholm, 15 Sep 60.

DESCRIPTORS: Signals, Direct current, Electrical equipment, Measurement, *Transducers, Design.

Schütze, H. J. and Diouhy, F.
WAYS TO INCREASE THE RELIABILITY OF ELECTRON TUBES. [1962] 20p. 39 refs.
Order from SLA $1.60 62-18097

Trans. of Telefunken Röhre (Germany) 1961, no. 40, p. 169-186.

DESCRIPTORS: *Electron tubes, Reliability, Production, Cathodes (Electron tubes), Materials, Life expectancy.

The reliability of electron tubes today is determined essentially by the material and processing parameters. The influence of some materials used in tube construction is discussed. In order to obtain stable tube characteristics, passive alloys containing tungsten are convenient cathode materials, passive and heat-resistant materials are suitable for anodes and non-evaporating getters for removing the residual gases. Lifetimes of 50,000 hours were obtained without significant decrease of the emission. The noise test, environment test and pressure measurements in the sealed-off tube were used for early evaluation of materials, methods of processing and cathode environment. Some examples of application are discussed. (Author)

Tremblay, R.
MICROWAVE PHASE SHIFTER WITH DIELECTRIC PRISMS. [1961] [13]p. 14 refs.
Order from SLA $1.60 62-10622

Trans. of Canadian Journal of Physics, 1961, v. 39, p. 409-418.

DESCRIPTORS: *Microwave equipment, *Phase shifters, Dielectrics, Prisms (Optics).

A new type of microwave phase shifter was constructed, which has line sections of variable length.

In this device, a dielectric plate with parallel faces passes through two longitudinal slits on the larger faces of a rectangular waveguide. This plate is formed of two identical prisms placed in opposition. The displacement of one of the prisms relative to the other along the hypothenuse changes the effective length of the dielectric plate within the guide, with a consequent shift of the wave that traverses this quadrupole. The possibility of designing a phase shifter of this type using only a single prism is also discussed. The characteristics of this type of variable phase shifter are as follows: high phase resolution, 0.7^0; easy matching, S. W. R. of 1.05; weak sensitivity to frequency variations; phase shift linear with respect to the displacement of one of the prisms; and very simple mechanical construction. (Author)

Vasilevskii, V. I.
GENERADORES DE CORRIENTE ALTERNA PARA AUTOBUSES, CAMIONES Y AUTOMOVILES LIGEROS (Generatory Peremennogo Toka dlya Avtobusov, Gruzovykh i Legkovykh Avtomobilei) (Alternating Current Generators for Lorries, Buses and Light Automobiles). 13p. (foreign text included). CID: 62-62 (text in Spanish).
Order from OTS or ETC $1.10 62-26262

Trans. of Avtomobil'naya Promyshlennost' (USSR) 1958, no. 1, p. 28-29.

DESCRIPTORS: *Generators, *Alternating current, Cargo vehicles, Passenger vehicles.

Veksel'man, O. G.
CALCULO DE LOS POSTES Y LINEAS DE CONDUCCION DE ENERGIA ELECTRICA EN CONDICIONES LIMITE (Raschet Opor i Provodov Linii Elektroperedachi po Predel'nomu Sostoyaniyu) (Calculation of Electric Power Poles and Lines under Limit Conditions). 23p. 14 refs. CID: 62-63. (text in Spanish).
Order from OTS or ETC $1.55 62-26263

Trans. of Elektrichestvo (USSR) 1956, no. 9, p. 53-59.

DESCRIPTORS: *Electrical networks.

Vinokurov, V. I. and Makkaveev, V. I.
TRAVELLING WAVE PARAMETRIC AMPLIFIER WITH LOSSES. [1962] [10]p. 4 refs. [DSIR] NLL M. 6304.
Order from OTS or SLA $1.10 62-25942

Trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Radiotekhnika (USSR) 1961 [v. 4] no. 3, p. 270-279. Another trans. is available from OTS or SLA $15.00 in 62-13863, JPRS-11524 [1961] [238]p.

DESCRIPTORS: *Travelling wave tubes, *Amplifiers, Circuits, Transmission, *Semiconductors, Diodes, *Coils, Inductance, *Parametric amplifiers.

The method of analyzing a discretely-distributed parametric amplifier, taking into account active losses, is described. Relationships determining the transmission coefficient and amplifier frequency pass band are obtained.

Wolak, Kurt.
PROTECTIVE GAS CONTACTS AND PROTECTIVE GAS CONTACT RELAYS. [1962] [7]p. 3 refs.
Order from SLA $1.10 62-14388

Trans. of Siemens Zeitschrift (West Germany) 1958, v. 32, no. 12, p. 845-847.

DESCRIPTORS: *Electric relays, Switching circuits, *Electric switches, Design, Model tests.

Test results and relay constructions are described with the Bell Telephone Laboratories "dry-reed" switch.

Ordnance, Missiles, and Satellite Vehicles

Isaev, V. K.
ADDENDUM TO THE PAPER "L. S. PONTRYAGIN'S MAXIMUM PRINCIPLE AND OPTIMUM PROGRAMMING OF ROCKET THRUST. 16 Mar 62 [5]p. 2 refs. JPRS: 12528.
Order from OTS or SLA $1.10 62-23623

Trans. of #Avtomatika i Telemenkhanika (USSR) 1962, v. 23, no. 1, p. 127.

DESCRIPTORS: Rockets, *Thrust, *Rocket flight, Rocket trajectories, Equations of motion, Control, Programming, Non-linear differential equations, Corrections.

It is shown that conditions C and E that were considered by G. Leitmann (J. Aero Space Sci. 26: No. 9, 1959) are impossible. (See also 62-19162)

Vilyunov, V. N.
ON THE MATHEMATICAL THEORY OF THE STATIONARY BURNING RATE OF CONDENSED SUBSTANCES (K Matematicheskoi Teorii Statsionarnoi Skorosti Goreniya Kondensirovannogo Veshchestva). [1962] [10]p. (foreign text included) 6 refs.
Order from OTS or SLA $1.10 62-16733

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1961, v. 136, no. 1, p. 136-139.

DESCRIPTORS: *Explosives, Nitroglycerin, Powders, *Combustion, Theory, Pressure, Numerical analysis.

The combustion theory of Ya. B. Zel'dovich (Zhur. Eksptl. Teor. Fiz. 12: 498-524, 1942; available in translation from OTS $0.50 as 61-11779) is generalized for the case of condensed matter burning under low pressures.

Cardozo, R. Lopex and Dejonghe, P.
THE REMOVAL OF GASEOUS CONTAMINANTS FROM IAR WITH A SORBANT INJECTION SYSTEM. Special report no. 2; Presented at the International Air Cleaning Conference, Brookhaven National Lab., 10-12 Oct 61. [1962] 16p. 2 refs.
Order from OTS or SLA $1.60 EURAEC-196

Trans. of rept. from Centre d'Etude de l'Énergie Nucléaire, Brussels (Belgium) [1961].

DESCRIPTORS: *Air, *Decontamination, Gases, Cleaning, Absorption, Towers (Chemistry), Charcoals, Injectors, Contamination

It is shown that a sorbant injection system can be used as a means of cleaning gases from contaminants when low or intermediate decontamination factors are allowed, for instance in closed circuits. The sorbant injection system, in its simplest form, is composed of a certain pipe length with a sorbant feed system at the head-end and a cyclone, to remove the sorbant from the gas stream, at the tail-end. It is shown that decontaminations of the order of 99% are easily obtainable. (Author)

Dabac, Vlatka.
THE RESULTS OF WATER METER TESTING IN THE ZAGREB MUNICIPAL WATER WORKS (Die Ergebnisse einer Wasserzählernachprüfung beim Städtischen Wasserwerk Zagreb). [1962] [11]p. 3 refs.
Order from SLA $1.60 62-16313

Trans. of [GWF; das] Gas- und Wasserfach (Germany) 1941, v. 84 [no. 1] p. 9-13.

DESCRIPTORS: *Water supplies, Dams, Meters, Urban areas, Consumption.

After an account of the development of the Zagreb water works, the testing of the accuracy of water meters and of the leakage in house piping is discussed; the results, particularly the relation of water meter reading to rate of consumption, leakage in house piping, and construction of the meter, are presented. (Author)

STUDIES IN HYGIENE AND SANITATION. 2 July 62 [61]p. (4 figs. omitted) 70 refs. JPRS: 14345.
Order from OTS or SLA $6.60 62-25622

Trans. of Gigiena i Sanitariya (USSR) 1962, v. 27, no. 3, p. 14-17, 22-49, 70-84.

DESCRIPTORS: *Sanitary engineering, *Radioactivity Water, Hydraulic reservoirs, Stability, Adjustment (Psychology), *Physiology, Public health, Agriculture, Labor, *Children, Food, *Radiation effects, Gamma rays, *Fats, Ionization, Recreation, *Clothing, Dosage, *Ultraviolet radiation, *Immunology, Population, Neoplasms.

Contents:
On the problem of radioactivity of water in open reservoirs, by V. M. Kupriyanova and E. S. Romanova
On the stability of adaptation (on deadaptation) by B. B. Koyranskii
The experience of applying some physiological methods of research for hygienic evaluation of agricultural labor of school children, by I. D. Dubinskaya and V. K. Kuz'mina
Change in the chemical indices of alimentary fats under the action of ionizing radiation, by A. A. Fomin
Experience with rationalization of sport clothes for skiers and racers (ski-racers) by A. A. Minkh and others
Some results of the study of the activity (effect) of small doses of ultraviolet radiation on the defense-adaptation functions of the organism, by M. L. Koshkin
Hygienic problems during the study of the effect of an increased natural radioactive background of the environment on the health of the population, by Yu. V. Novikov and I. I. Rezanov.

FOOD, HANDLING, AND PACKAGING EQUIPMENT

Food

Arbeit, H.
NUTRITION AND PERFORMANCE. [1962] 7p. (figs. tables omitted).
Order from SLA $1.10 62-16915

Trans. of Stahl und Eisen (West Germany) 1947 [v. 66/77] 27 Feb, p. 87-90.

DESCRIPTORS: *Nutrition, *Public health, Production, Diet, *Calorimetry.

VARIOUS ASPECTS OF NUTRITION STUDIED IN THE USSR. 14 Aug 62 [35]p. 10 refs. JPRS: 14836.
Order from OTS or SLA $3.60 62-32439

Trans. of Voprosy Pitaniya (USSR) 1962, v. 21, no. 3, p. 3-8, 37-40, 61-66, 89-90.

DESCRIPTORS: *Nutrition, Polymers, *Food, *Packaging, Animals, Liver, Blood chemistry, *Fatty acids, Secretion, *Pancreas, Enzymes, Temperature, Stimulation, *Radioactivity.

Contents:
New polymer materials used for food packaging, by S. V. Genel' and A. I. Shtenberg
Adaptation of animal organisms to conditions of varying intake of saturated and nonsaturated fatty acids, by M. F. Merezhinskii and S. M. Nikitina
Secretion of pancreatic enzymes at high temperature in response to various food stimulants, by Yu. A. Shcherbakov
Some data on the natural radioactivity of food products, by N. N. Grigor'yants.

MACHINERY, FABRICATION, AND ACCESSORY EQUIPMENT

SOVIET INDUSTRIAL DEVELOPMENT: [SELECTED] TRANSLATIONS ON SOVIET CONSTRUCTION MACHINERY (14). 25 July 62 [43]p. JPRS: 14588.
Order from OTS or SLA $4.60 62-32057

Trans. of Byulleten' Stroitel'noi Tekhniki (USSR) 1962, no. 4, p. 14; Avtomobil'naya Promyshlennosti' (USSR) 1962 [v. 28] no. 2, p. 44; Stroitel'nye i Dorozhnye Mashiny (USSR) 1962 [v. 7] no. 4, p. 1-7; 33-37; and from Ekonomicheskaya Gazeta (USSR) 1962 [no. 17(38)] p. 29-30.

DESCRIPTORS: Industrial research, *Construction, *Machines, Standards, Bridges, Hoists, Loaders, Labor, Road building equipment, Civil engineering.

Contents:
State All-Union standard (GOST) for the main parameters of bridge cranes
New self-propelled loaders, by V. I. Ivanov
Two million additional workers required to make up lag in road-machine construction, by M. Ovsyannikov
New types of road-building machines, by A. A. Vasil'ev
Standard types of construction mast derricks for 1960-65
Nomenclature of road machines produced in series
New machines.

Gusman, M. T. and Mitel'man, B. I.
ON TURBINE DRILLING OF WELLS OF REDUCED DIAMETER (O Turbinnom Burenii Skvazhin Umen'shennykh Diametrov). [1962] [12]p. (foreign text included).
Order from OTS or SLA $1.60 62-14558

Trans. of Neftyanoe Khozyaistvo (USSR) 1957, v. 35, no. 2, p. 11-14.

DESCRIPTORS: *Well drilling, *Turbines, Drills, Effectiveness, *Drilling machines.

In the present article there is analyzed the problem as to what requirements should be met by the parameters of turbine drills for drilling with chisels of different diameters, to secure uniform conditions for disintegration of mining rocks, i.e. uniform mechanical velocities. (Author)

Hugot, Rene Lucien.
MACHINE FOR SANDING AND MAINTAINING PARQUETS. [1956] 8p. (figs. omitted).
Order from OTS or SLA $1.10 62-16383

Trans. of French patent 785881, gr. 19, cl. 6, appl. 8 May 34, issued 27 May 35, pub. 21 Aug 35.

DESCRIPTORS: *Floors, Wood, Maintenance, *Abrasive blasting machines, *Sandblasting, Abrasives, Machines

Reinhart, Hans.
GRINDING OF HARD METALS (CARBIDES) WITH DIAMOND GRINDING WHEELS. [1962] 13p. (figs. omitted) 4 refs.
Order from SLA $1.60 62-16840

Trans. of Werkstatt und Betrieb (West Germany) 1961, v. 94, no. 8, p. 529-533.

DESCRIPTORS: *Carbides, Metals, *Grinders, *Diamond wheels.

Diamond grinding wheels bonded with bronze were advantageously sharpened with ceramic bonded carborundum honing stones. A requirement was recognized that the grains of the hone must be somewhat coarser than those of the diamond used in the apparatus. The rule of thumb for figuring the grain number of the hone in the usual diamond designations of the German Language according to DIN848 (average grain size in microns) is expressed in the following equation: $\text{Grain Size} = \frac{150 \times 100}{\text{grain number}}$

The surface pressure is the decisive factor in economical use of diamond grinding wheels. Every diamond grain has an optimum surface pressure. The optimum surface pressure leads to self-sharpening of the diamond wheel, while too low a surface pressure dulls the diamond grains. The boundary between optimum and too great a surface pressure is very sharp. The value of the optimum surface pressure appears as a function of the pressure surface: it decreases with increasing surface. It is recommended that heat development during grinding be avoided as much as possible, using wet grinding, plunge grinding, porous diamond binders, and reduction of peripheral velocity of the grinding wheel.

Reuthe, W.
MODERN HYDRAULIC DRIVE SYSTEMS FOR MACHINE TOOLS (Neuzeitliche Hydraulische Antriebssysteme für Werkzeugmaschinen). [1962] [24]p. (foreign text included) 4 refs.
Order from SLA $2.60 62-10941

Trans. of Werkstattstechnik und Maschinenbau (Germany) 1958, v. 48, no. 12, p. 631-635.

DESCRIPTORS: *Machine tools, *Hydraulic presses, Control systems, *Power drives, Hydraulic systems.

Engines and Propulsion Systems

Conzelmann, Gerhard and Knapp, Heinrich.
[THE ION-CURRENT MEASURING METHOD AND ITS USE IN THE OTTO ENGINE]. II. INTERFERENCE SUPPRESSION AND IGNITION (Ionenstrommessung und Anwendungen am Ottomotor. II. Widerstandsentstörung und Entflammung). [1962] [17]p. (foreign text included) 2 refs.
Order from SLA $1.60 62-10728

Trans. of MTZ; Motortechnische Zeitschrift (West Germany) 1961, v. 22, no. 9, p. 339-341.

DESCRIPTORS: *Internal combustion engines, Interference, Reduction, Ignition, Tests, *Ionic current.

In the partial load range, the ignition of the fuel-air mixture by the spark is dependent upon the operating state of the engine and upon the effective cross section of the spark. A statistical method is derived from ion-current diagrams which permits an improved evaluation of the ignition in the engine over the measurements of revolutions and power. The influence of interference elimination resistors in the ignition circuit on the ignition is investigated with two engines of different manufacture and the results are interpreted. (Author)

Conzelmann, Gerhard and Knapp, Heinrich.
[THE ION-CURRENT MEASURING METHOD AND ITS USE IN THE OTTO ENGINE]. III. INVESTIGATIONS OF THE MIXTURE FORMATION OF OTTO ENGINES AT IDLING SPEEDS (Ionenstrommessung und Anwendungen am Ottomotor. III. Untersuchung der Gemischbildung von Ottomotoren im Leerlauf). [1962] [11]p. (foreign text included).
Order from SLA $1.60 62-10727

Trans. of MTZ; [Motortechnische Zeitschrift] (West Germany) 1961, v. 22, no. 9, p. 342-343.

DESCRIPTORS: *Internal combustion engines, Fuel injection, Operation, Tests, *Ionic current, Combustion, Torque.

Samoilov, V. N.
EXPERIMENTAL INVESTIGATION OF THE ERRORS OF PRESSURE BALANCES CAUSED BY DISTORTIONS. (Eksperimental'noe Issledovanie Pogreshnostei Porshnevykh Manometrov, Vyzyvaemykh Deformatsiyami). [Paper from Investigations of Piston Pressure Gauges]. Mar 62 [27]p. 2 refs. RTS 1988.
Order from OTS or SLA $2.60 62-25110

Trans. of [Komitet Standartov, Mer i Izmeritel'nykh Priborov]. Trudy Institutov Komiteta (USSR) 1960, v. 46(106) p. 43-54.

DESCRIPTORS: Experimental data, *Pressure gages, Gages, Distortion, Errors, *Pistons, Cylindrical bodies, Engine cyclinders.

The problem of errors caused by distortions is solved to the first approximation for the basic types of pressure balances having piston-cylinder assemblies differing with regard to the shape, dimensions, and materials of their pistons and cylinders. (Author)

Zel'kin, G. G.
A PHOTON ROCKET. [1961] [10]p. 4 refs.
Order from OTS or SLA $1.10 62-10186

Trans. of Priroda (USSR) 1960 [v. 49] no. 11, p. 69-72.
Another trans. is available from OTS $1.60 as AD-264 133, STL-TR-61-5110-7, Feb 61, 10p.

DESCRIPTORS: *Space flight, Rocket motors, Rocket propulsion, *Photons, Ejection, Velocity, *Mass energy relations, Astronautics, Spaceships, Exhaust gases.

The utilization of light quanta (photons) to attain velocities approaching the speed of sound in space flight is discussed. The following phases of the problem are considered: comparative performance of chemical, plasma, ionic, and nuclear fuels the amount of fuel required the energy of photon rockets and equipment for the production of directed radiation. (Astia abstract)

Zhokhovskii, M. K.
THE THEORY OF PRESSURE GAUGES INCORPORATING PISTONS WITHOUT PACKING (Teoriya Manometrov s Neuplotnennym Porshnem). Paper from Investigations of Piston Pressure Gauges. Mar 62 [49]p. 9 refs. RTS 1986.
Order from OTS or SLA $4.60 62-24292

Trans. of [Komitet Standartov, Mer i Izmeritel'nykh Priborov]. Trudy Institutov Komiteta (USSR) 1960, v. 46(106) p. 5-29.

DESCRIPTORS: *Pistons, *Pressure gages, Gages, Theory, Pressure, High pressure research, Engine cylinders.

Manufacturing Equipment and Processes

EXPLOSIVE METAL FORMING AND ELECTRO-HYDRAULIC EFFECT: SURVEY OF SOVIET LITERATURE. 14 Dec 60 [5]p. 13 refs. AID Rept. 60-108; AD-250 074.
Order from OTS or SLA $1.10 61-15659

DESCRIPTORS: *Explosive forming, *Metal forming presses, *Electroforming, *Hydraulic presses, Manufacturing methods.

A METHOD OF PERFUMING CIGARETTES. [1962].
Order from K-H $3.75 K-H 11296b

Trans. of [published] Japanese patent, special appl. 1953-6325 and patent appl. 1955-1848.

DESCRIPTORS: *Odors, *Cigarettes, Tobacco, *Manufacturing methods.

L'vov, N. S.
AUTOMATED WELDING OF JOINTS WITH ARBITRARY DIRECTION. 13 Oct 61 [43]p. 14 refs. MCL-1247; AD-266 480.
Order from OTS or SLA $4.60 62-23363

Unedited rough draft trans. of mono. Sistemy Avtomaticheskogo Regulirovaniya i Upravleniya Nekotorye Voprosy Teorii i Tekhniki, Moscow, 1959, p. 150-167.

DESCRIPTORS: *Welded joints, Arc welds, Arc welding, Welding, Automation, Control system, Electric arcs, Welding rods, Wire.

A simplified design is given for a device used in controlling the rate of fielding electrodes to automatic welding equipment.

Transport, Traction and Hoist Facilities

Andreev, V.
IMPROVING NAVAL LOGISTICS OPERATIONS. 7 May 62, 6p. (illus. omitted).
Order from OTS or SLA $1.10 62-33150

Trans. of [Tyl i Snabzhenie Sovetskikh Vooruzhennykh Sil] (USSR) 1961 [v. 21] no. 7 [p. 50-54].

DESCRIPTORS: *Naval logistics, Logistics, *Naval operations.

Belkin, L. I.
NORMAS PARA LA ORGANIZACION DE LOS TRABAJOS DE DELINEADO Y PROYECTADO DE AUTOMOVILES (O Standartakh na Sistemu Chertezhnogo Khozyaistva) (Standards for the Organisation of Automobile Drawing and Design). 14p. CID: 62-33. (text in Spanish).
Order from OTS or ETC $1.15 62-26233

Trans. of Avtomobil'naya Promyshlennost' (USSR) 1959, no. 4, p. 6-8.

DESCRIPTORS: Standards, Design, *Passenger Vehicles.

Dem'yanov, L. A.
METODO DE PRUEBAS DE FILTROS DE AIRE. (O Metodike Ispytanii Vozdukhoochistitelei) (Test Method for Air Filters). 10p. 1 ref. CID: 62-54. (text in Spanish).
Order from OTS or ETC $1.- 62-26254

Trans. of Avtomobil'naya Promyshlennost'(USSR) 1959, no. 10, p. 14-16.

DESCRIPTORS: Test methods, *Air intake filters.

Opial, Miloš
DIE ERSTE TSCHECHOSLOWAKISCHE WECHSELSTROMLOKOMOTIVE FÜR 25 kW, 50 Hz. (The First Czechslovakian Locomotive with Alternating Current 25 kW, 50 Hz). (text in German).
Order from T. I. B. $1.55

Trans. of Železniční Doprava a Technika Czechoslovakia 1962, v. 10, no. 1, p. 3-5 [sic].

DESCRIPTORS: *Locomotives, *Alternating current.

PROCESS FOR RENDERING SYNTHETIC FOAM PERMANENTLY ADHESIVE AND ARTICLES OF SYNTHETIC FOAM TREATED BY THIS PROCESS. [1961] 3p.
Order from OTS or SLA $1.10 62-10996

Trans. of descriptive memorandum in support of [Belgian] patent application 601091, by ADEREL S.P.R.L.

DESCRIPTORS: *Foams, Expanded plastics, Plastic coatings, *Adhesives, Films, Processing.

Instead of coating the synthetic foam with adhesive, the latter is applied to a surface which does not permit the adhesive to take hold, such as a surface coated with silicon resin, the adhesive layer then being placed on the synthetic foam putting the latter adhesive placed on the synthetic foam forms a film which is not absorbed and which preserves its adhesive powers indefinitely, so that the thus treated foam adheres to any suitable surface, may be detached from it after a prolonged period and still remain adhesive. In order to preserve this adhesivity when the foam is not being used, it is advantageous to keep its adhesive surface in contact with a surface which does not respond to the adhesivity, such as a silicon surface. (Author)

USSR CONSTRUCTION AND BUILDING MATERIALS INDUSTRY NO. 35, 16 July 62 [55]p. JPRS: 14479.
Order from OTS or SLA $5.60 62-32013

Trans. of Tsement (USSR) 1962 [v. 28] no. 2, p. 1-10; Promyshlennoe Stroitel'stvo (USSR) 1962 [v. 40] no. 3, p. 42-44; Beton i Zhelezobeton (USSR) 1962, no. 2, p. 1-2; Ekonomika Stroitel'stva (USSR) 1962, no. 4, p. 22-29 and 46-52; Stroitel'nye Materialy (USSR) 1962 [v. 8] no. 3, p. 1-4; and from Stroitel'naya Gazeta (USSR) 1962, 15 Apr, p. 3.

DESCRIPTORS: *Construction materials industry, *Cements, Industry, Construction, Production, Industrial equipment, Automation, Transportation, Housing, Economics.
Contents:
Prospects for the development of the cement industry
Improve the utilization of cement in construction, by I. I. Kholin and M. G. Kobrin
Expanding the raw materials base of the building materials industry, by G. A. Nechaev and S. D. Makashev
Principal trends of the improvement of techniques of cement production, by V. A. Aref'ev and others
Re-equipping the cement plants, by V. D. Lysenko
The principal trend of the automation of cement production, by E. L. Itskovich
Delays in deliveries of equipment to the construction and building materials industry, by P. Degtyarev
Establish a strong production base of construction,
For an integrated industrial base of construction for Kazakhstan, by V. Putintsev
Initial results of performance of the Moscow housing construction combine, by I. Naumov
A strong building materials and components industry as the foundation for a successful fulfillment of capital construction plans.

Alekseev, A. A.
CONSUMO DE CAL EN LA CAUSTIFICACION (Raskhod Izvestina Kaustizatsiyu) (Consumption of Limestone in Caustification). 8p. CID: 62-88. (text in Spanish).
Order from OTS or ETC $0.90 62-26288

Trans. of Bumazhnaya Promyshlennost' (USSR) 1955, v. 30, no. 1, p. 6-7.

DESCRIPTORS: *Limestone, Oxydation.

Betanelli, I. D.
EMPLEO DE TRANSPORTADORES DE CINTA PARA EL ACARREO DEL HORMIGON (Primenenie Lentochnykh Transporterov dlya Peremeshcheniya Betonnoi Smesi) (Band Conveyor Utilisation in Concrete Transportation). 18p. CID: 62-43. (text inSpanish).
Order from OTS or ETC $1.30 62-26243

Trans. of Gidrotekhnicheskoe Stroitel'stvo (USSR) 1953, v. 22, no. 8, p. 1-5.

DESCRIPTORS: *Conveyors, Concrete.

Cloes, R. and Dutron, P.
COMPARISON OF QUALITY CRITERIA OF SILTY SAND SOIL-CEMENTS (SUMMARY AND CONCLUSIONS). [1962] 4p.
Order from SLA $1.10 62-18015

Trans. of Annales des Travaux Publics de Belgique, 1959 [v. 112] no. 2, p. 28-29.

DESCRIPTORS: *Cements, *Soils, Quality control, Mechanical properties, Sand.

Egner, E.
WEAR RESISTANCE OF FLOOR COVERINGS (BASED ON SHORT PERIOD TESTS). [1962] 7p. (16 figs. 2 tables, refs. omitted).
Order from SLA $1.10 62-18158

Trans. of V[erein] D[eutscher] I[ngenieure]. Zeitschrift (West Germany) 1950, v. 92, no. 7, p. 169-173.

DESCRIPTORS: *Floors, Friction, Resistance.

Khrushchov, M. M.
MICROHARDNESS, MOOS HARDNESS AND CLASSES OF HARDNESS. 11 Oct 61 [3]p. 6 refs.
Order from OTS or SLA $1.10 62-10639

Trans. of A[kademiya] N[auk] [S]SSR. Doklady, 1950, v. 72, no. 4, p. 779-780.

DESCRIPTORS: Minerals, Standards, *Hardness, Diamonds, Tests, Logarithms, *Classification, Corundum.

Mchedlov-Petrosyan, O. P. and Bundakov, A. G.
PHYSICO-CHEMICAL ASPECTS OF THE MANUFACTURE AND TREATMENT OF CONCRETE AND CONCRETE PRODUCTS. [1962] 9p. 28 refs.
Order from SLA $1.10 62-18010

Trans. of Silikat Technik (East Germany) 1961, v. 12, no. 6, p. 292-294 (trans. from original Russian by H. Frahn).

DESCRIPTORS: *Concrete, *Cements, Dispersion hardening, Chemical reactions, *Construction materials industry, Structures, Mechanical properties, *Reinforced concrete

Adhesives and Sealants

DEVICE WITH AUTOMATIC APPLICATION OF ADHESIVE PAPER TAPES. [1954] 1p.
Order from OTS or SLA $1.10 62-16381

Trans. of French patent 806,796, gr. 20, cl. 4, by (society named) Knitting Palois, appl. 4 Feb 35, delivered 5 Oct 36, pub. 24 Dec 36.

DESCRIPTORS: *Adhesive tapes, *Paper, Seals, Industrial equipment, Automatic.

WET ADHESIVE DRESSING. [1961] 3p. (figs. omitted).
Order from OTS or SLA $1.10 62-16385

Trans. of French patent [755 273] gr. 19, cl. 2, appl. 8 May 33, granted 4 Sep 33, pub. 22 Nov 33.

DESCRIPTORS: *Wounds, *Adhesives, Liquids, Moisture.

Rado, M. Leopold.
AN IMPERMEABLE FLEXIBLE MATERIAL WHICH CAN BE APPLIED BY GLUE. [1962] 5p. (figs. omitted).
Order from OTS or SLA $1.10 62-16387

Trans. of French patent 682,785, 2 June 30.

DESCRIPTORS: Cellulose, Films, *Adhesives, Containers, *Seals, Materials.

Ceramics and Refractories

PROCEDURE FOR THE PRODUCTION OF GLASSES WITH A HIGH TITANIUM OXIDE CONTENT. 25 Feb 53, 4p.
Order from OTS or SLA $1.10 62-16544

Trans. of French patent 719,067 [1931].

DESCRIPTORS: *Glass, Production, Oxides, *Titanium compounds

Baumgart, Wolfgang.
ON THE BEHAVIOR OF MAGNESITE BRICK WHICH ARE LOW IN IRON CONTENT, IN THE CHECKER CHAMBERS OF REGENERATIVE GLASS MELTING FURNACES. [1962] 10p. (7 figs. 2 tables omitted) 7 refs.
Order from SLA $1.10 62-14224

Trans. of mono. (paper) presented at the HVG Colloquium on Refractory Materials in the Glass Industry, Frankfurt, a.M., 23 Oct 59.

DESCRIPTORS: *Glass, *Melting, Magnesite, Ovens, *Heat exchangers, Oil burning furnaces, *Brick, Iron.

By torsion tests, the plastic and elastic behavior of chamber brick made of fire clay, of sintered magnesite brick of low and high iron content, can be determined. Mentioned is the influence of a cyclic change of atmosphere and of the advantages of special magnesite brick which are low in iron content. There are no indications for a reaction between vanadium pentoxide and the magnesite checker brick. The behavior of fire brick and magnesite brick as heat exchangers was tested in an oil-fired chamber oven, resulting in a definite superiority of the magnesite brick. (Author)

Busby, T. S.
REPLY TO F. BRUNNSTEINER'S ARTICLE: "CHOICE OF BASIC BRICKS FOR THE REGENERATORS OF GLASS TANK FURNACES". 4 Nov 60, 2p. 2 refs.
Order from SLA $1.10 62-14221

Trans. of Glastechn[ische] Ber[ichte] (West Germany) 1960, v. 33, no. 9, p. 340.

DESCRIPTORS: *Brick, *Heat exchangers, *Glass, Manufacturing methods.

Fein, Yu. E.
EMPLOYMENT OF SODIUM SULPHATE IN GLASS-BOILING, PT. I. [Primenenie Sul'fata Natriya v Steklovarenii]. [1962] 14p. (refs. included in pt. II).
Order from OTS or SLA $1.60 62-16463

Trans. of Legkaya Promyshlennost' (USSR) 1946 [v. 6] no. 1, p. 37-39.

DESCRIPTORS: *Glass, Boiling, *Sodium compounds, *Sulfates, Chemical reactions.

A survey is made of the Soviet and the foreign literature on the employment of sodium sulphate in glass boiling.

Fein, Yu. E.
EMPLOYMENT OF SODIUM SULPHATE IN GLASS-BOILING, PT. II. (Primenenie Sul'fata Natriya v Steklovarenii). [1962] [15]p. (foreign text included) 32 refs.
Order from OTS or SLA $1.60 62-16464

Trans. of Legkaya Promyshlennost' (USSR) 1946 [v. 6] no. 2, p. 39-41.

DESCRIPTORS: *Glass, Boiling, *Sodium compounds, *Sulfates, Chemical reactions.

The physicochemical characteristics of sodium sulphate in glass charges facilitate and accelerate the process of boiling. In view of this it must be concluded that, despite the fact that the reaction of sodium sulphate with silica theoretically requires a higher temperature than soda, practical experience absolutely fails to show the necessity of employing a higher temperature than with a soda charge. Sulphate charges do, however, require more complicated conditions of boiling, and the observation of particular sequences in the reducing and oxidizing conditions, which, in their turn, require certain modifications in the traditional methods of boiling, and in the construction of the bath furnaces. (Author) (See also 62-16463)

Jong, J. de.
IRON IN GLASS (Le Fer dans le Verre). [1962] [28]p. (foreign text included) 8 refs.
Order from SLA $2.60 62-16147

Trans. of Verres et Refractaires (France) 1951, v. 5, no. 6, p. 393-311.

DESCRIPTORS: *Glass, *Iron, Cermets, Refractory materials.

The behavior was studied of small quantities of iron in glass; principally by measuring the transmission of glass in ultra violet and infra red, taking into consideration the influence of the socalled "solarization" process. The ferric and the ferrous ions exist in the studied glasses only in the formative positions. The differences found concerning the absorbing influence of the ferric ions in the region of the ultra violets and following changes of the composition of the glass, are attributed to the influences exerted on the electronic processes which take place in the ferric ions due to atomic electro-static fields of adjacent cations. The determination results are given concerning the equilibrium between ferric and ferrous ions in glass, which were obtained by optical and magnetic measures.

Löffler, Johannes.
INFLUENCE OF DEVITRIFICATION ON THE HOMOGENEITY OF FOURCAULT GLASS. 25 July 60, 5p. (10 figs. omitted) 5 refs.
Order from SLA $1.10 62-14217

Trans. of Glastechn[ische] Ber[ichte] (West Germany) 1960, v. 33, no. 4, p. 117-120.

DESCRIPTORS: *Glass, Production, Drawing (Machine processing), Crystals, Crystallization.

Matveev, M. A. and Velya, V. V.
INVESTIGATION OF THE CRYSTALLIZATION OF LITHIUM GLASSES OF THE Li_2O - SiO_2 SYSTEM (Issledovanie Kristallizatsii Litievykh Stekol Sistemy Li_2O - SiO_2). [1962] [26]p. (foreign text included) 6 refs.
Order from OTS or SLA $2.60 62-10933

Trans. of Steklo i Keramika (USSR) 1959, v. 16, no. 10, p. 14-20.

DESCRIPTORS: *Glass, Crystallization, Microstructure, *Lithium compounds, Oxides, Dioxides, *Silicon compounds, Deformation, Refractive index, Instrumentation.

The crystallization was investigated of simple lithium glasses which, according to their composition, correspond to the formulas $Li_2O \cdot (1\text{-}6)SiO_2$. The crystallization temperature of the lithium glasses changed but slightly with the increase of the silicic modulus, and was 600° ± 20°C for all glasses. Mixed crystals of silica are separated in the lithium disilicate during the crystallization of the glasses $Li_2O \cdot (3\text{-}6)SiO_2$ at 600° ± 20°C. The crystallization of lithium glasses takes places without deformation.

Motorina, L. I.
AERODYNAMIC RESISTANCE IN LARGE GLASS-MELTING TANK FURNACES (Aerodinamicheskie Soprotivleniya Vannykh Steklovarennykh Pechei Bol'shoi Proizvoditel'nosti). [1962] [24]p. (foreign text included) 4 refs.
Order from OTS or SLA $2.60 62-10936

Trans. of Steklo i Keramika (USSR) 1951, v. 8 [no. 7] p. 4-10.

DESCRIPTORS: *Glass, Melting, Aerodynamics, Resistance, Aerodynamic data, Aerodynamic heating.

In order to avoid insufficiencies of traction resources in a furnace along-side with possible increases of specific output of glass or deterioration of the quality of fuel, it is expedient for the aerodynamic calculations of a furnace's performance to adopt conditionally as its specific output of glass the value of 1000 kg/m^2/day. Aerodynamic resistance in glass-melting in tank furnaces should be calculated by accounting for the expenditure of pressure in terms of the creation of the velocities of the gases, local resistance of the regenerator checkers, sudden expansion or contraction of sections, and inavoidable inleakages of air along the path of motion of the combustion products toward the pipe. Measures aimed at lowering resistance in glass melting tank furnaces should be introduced basically in relation to the "narrow" tract. The "narrow" tract should be determined along with an accounting for the clogging of the gas or air checkerwork grates. Tank furnaces of all sheet glass plants should be converted to the use of force feeding of air into the regenerators regardless of their use of automatic apparatuses. The traction resources of large tank furnaces of sheet glass should exceed (at the beginning of their drive) the calculated resistance for the furnace aggregate by no less than 15 mm water gauge. (Author)

Skatulla, Walther, Vogel, Werner, and Wessel, Hans.
PHASE SEPARATION AND BORIC ACID ANOMALY IN SIMPLE SODIUM BORATE AND TECHNICAL ALKALI BOROSILICATE GLASSES (Über Phasentrennung und Borsäureanomalie in Einfachen Natriumborat- und Technischen Alkaliborosilikatgläsern). [1962] [50]p. (foreign text included) 15 refs.
Order from SLA $4.60 62-14486

Trans. of Silikat Technik (East Germany) 1958, v. 9, no. 2, p. 51-62.

DESCRIPTORS: *Glass, Boric acids, Borates, Sodium compounds, Phase studies, Separation, Silicates, Boron compounds.

When we investigated glasses containing BeF_2 we found that the binary system Na_2O-B_2O_3 will furnish completely clear glasses which show no Tyndall effect, yet they will contain regions of phase separation which are 150 to 250 Å long. We investigated glasses of the binary system Na_2O-B_2O_3, of the ternary system Na_2O-B_2O_3-SiO_2, and more complicated (quaternary) alkali borosilicate glasses, by aid of the electron-microscope. It was found that all the clear glasses had regions of droplet shape which clearly show a phase separation, and the drops are of various sizes. The phase separation in the binary sodium borate system is due to the boric acid anomaly, and this boric acid anomaly is the reason that one may make use of the phase separation when manufacturing glasses of the Vycor type; the tendency for a phase separation occurs clearly in the ternary glass system Na_2O - B_2O_3-SiO_2, it also occurs at glasses of the Pyrex type. (Author)

Schwiecker, Werner.
ELASTIC STRESSES IN GLASS, THEIR IMPORTANCE AND THEIR MEASUREMENTS (Elastische Spannungen in Gläsern, ihre Bedeutung und ihre Messung). [1962] [19]p. (foreign text included) 45 refs.
Order from SLA $1.60 62-14878

Trans. of Vakuum-Technik (West Germany) 1952, v. 1, no. 1, p. 14-18.

DESCRIPTORS: *Glass, Mathematical analysis, *Stresses, Measurement, *Elasticity, Ceramic materials, Shear stresses, Surfaces.

A survey is given of the problems encountered in stress investigations.

Trier, Wolfgang.
TEMPERATURE MEASUREMENTS IN THE GLASS BATH OF TANK FURNACES (Temperaturmessungen im Glasbad von Wannenöfen). [1962] [29]p. (foreign text included) 8 refs.
Order from SLA $2.60 62-16397

Trans. of Glastechnische Berichte (West Germany) 1953, v. 26, no. 1, p. 5-12.

DESCRIPTORS: *Glass, Melting, Temperature, Measurement, Test equipment, Gas flow, Convection, Pyrometers, Sheets, Tests.

A survey is given of the most important temperature measurements that have been made so far in the glass bath of tank furnaces. After discussing the testing apparatus, the results of the measurements are critically examined. It is tried to interpret some of the typical properties of the measured temperature zone. While the temperature condition within the glass bath could be clarified satisfactorily, the shunting of the convection currents from the temperature zone has to be considered as unsolved. Finally, it is tried, by means of two examples, to determine from measured temperature lines the heat flow in vertical direction within the glass melting tanks. (Author)

Velev, D. S.
INVESTIGATION OF BUBBLING IN TANK FURNACES OF THE GLASS INDUSTRY ON A MODEL (Issledovanie na Modeli Burleniya v Vannykh Steklovarennykh Pechakh). [1962] [15]p. (foreign text included) 2 refs.
Order from OTS or SLA $1.60 62-16417

Trans. of Steklo i Keram[ika] (USSR) 1959, v. 16, no. 8, p. 13-16.

DESCRIPTORS: *Glass, Gases, *Bubbles, Industrial research, Model tests.

The findings at the model suggest the following conclusions. The application of a continuous bubbling in tank furnaces improves the homogenization and the fining of the batch; the productivity of a furnace is increased. The stream of the bubbling gas acts as a powerful introducer of a gradient, thus bringing about a convection current which is split off, so that only the working current flows forward. Therefore in the presence of a bubbler additional current becomes established, which shows all the disadvantages known from such special, tubular flows.

Vilnis, K. K. and Stepanenko, M. G.
HEAT EXCHANGE BETWEEN THE CHARGE AND THE HEARTH OF THE GLASS MELTING FURNACES (Teploobmen Mezhdu Shikhtoi i Plamennym Prostranstvom Steklovarennoi Pechi) [1962] [15]p. (foreign text included) 4 refs.
Order from OTS or SLA $1.60 62-10950

Trans. of Steklo i Keramika (USSR) 1959, v. 16, no. 3, p. 8-11.

DESCRIPTORS: *Glass, *Melting, Heat exchangers, *Heat transfer, Heat of formation, High temperature research

An explanation is given of heat exchange between the upper furnace structure, the charge, and the charge foam in the melting region. The heat amount absorbed by the melting zone depends, firstly, on the ratio of the areas occupied by the charge and the charge foam, and secondly, on the magnitude of the absolute temperature in the upper structure. The efficiency increase of tank furnaces for glass melting is brought about not only by providing high temperatures, but also by the rational exploitation of the heat exchange both in the gas zone and in the glass mass.

Boyer, A. F. and Durand, G.
THE REACTIVITY OF COKE. II. STUDY OF FOUNDRY COKES AND COMPARISON WITH THEIR USE VALUE (La Réactivité des Cokes. II. Étude de Cokes de Fonderie et Comparaison avec leur Valeur d'Usage). [1962] [46]p. 8 refs.
Order from SLA $4.60 62-14861

Trans. of Chimie et Industrie (France) 1959, v. 82 [no. 3] p. 309-328.

DESCRIPTORS: *Coke, Temperature, Density, Porosity, Chemical reactions, Classification, Tests, Cupola furnaces.

Two series of cokes, commercial or experimental, were used in foundry cupola furnaces so as to measure their thermal output in cast metal fusion and to estimate their use value. These cokes were studied in the laboratory where they were subjected to various measurements, especially those of porosity and reactivity. Although there is a certain correlation between reactivity at high temperature (>1300°C) and the use value, it appears that the conditions of initial size grading and resistance to fragmentation are more important. On the other hand, the good correlation existing between the apparent density and the reactivity at high temperature makes the measurement of the latter less useful. It appears that a foundry coke can be judged (apart from its chemical composition) by the three criteria of initial grading by size, grading by size after drum degradation test (M 80), and apparent density, at least for ordinary

Boyer, A. F. and Durand, G.
THE REACTIVITY OF COKE. III. INFLUENCE OF THE CHARGE DENSITY OF COAL ON THE REACTIVITY OF COKE AT HIGH TEMPERATURE (La Réactivité des Cokes. III. Influence de la Densité de Chargement du Charbon sur la Réactivité du Coke à Haute Température). [1962] [25]p. (foreign text included) 9 refs.
Order from SLA $2.60 62-14859

Trans. of Chimie et Industrie (France) 1960, v. 83, no. 2, p. 223-231.

DESCRIPTORS: *Coke, Temperature, Chemical reactions, *Coal, Density, Porosity, Coal gas, Production.

Cokes were prepared in the laboratory furnace and in a semi-industrial 400-kg furnace, making the charge density of the coal in the furnace vary. The porosity of these cokes and their reactivity at elevated temperature were studied. Increase in charge density entails a parallel increase in the apparent density of the coke as a result of the diminution in the volume occupied by pores above 15 μ. The rate of gasification into CO_2 at 1500°C of a given volume of coke remains constant; however, if this rate is related to the unit of mass, which is the current definition of reactivity, it is inversely proportional to the apparent density. It is deduced from this that it would be important as much as possible to utilize high charge densities for the manufacture of foundry cokes. (Author) (See also 62-14861)

Emme, St.
LUBRICANTS AND METHODS OF LUBRICATION. [1962] 11p. (22 figs. omitted).
Order from SLA $1.60 62-18156

Trans. of Mechanik (Poland) [1946] v. 19, no. 5/6, p. 165-172.

DESCRIPTORS: *Lubricants, *Lubrication, Friction.

Grodzovskii, M. K. and Samoilovich, D. M.
PREPARATION OF PRODUCER GAS FREE OF TAR. [1962] 4p. 3 refs.
Order from OTS or SLA $1.10 62-10877

[Condensed] trans. of Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya, 1945, no. 1/2, p. 57-69.

DESCRIPTORS: *Fuels, Coal gas, Production, Coal tar, Vaporization.

Leather and Textiles

Audivert, R.
NOTE ON THE DISTRIBUTION OF WEAK POINTS IN THE YARNS. 6 Nov 61 [10]p. 4 refs.
Order from SLA $1.10 62-14307

Trans. of Spanish language article from unidentified source, n.d., p. 272-275.

DESCRIPTORS: *Threads, *Textiles, Tensile properties, Rupture, Dynamometers, Tests.

The following conclusions are drawn from the experiments described. There is a relationship of the type $n^{1/3} = tT-b$, (in which n = the number of ruptures within the tested length, and T is the applied tension,) between the number of breaks and the tension applied to the plate of the Blanxart dynamometer. The distribution of the lengths between successive ruptures after an adequate transformation of the abscissae follows the terms of the modified Poisson distribution in which the values of variation is taken into account. (Author)

Fujisaki, Yoshisato.
EFFECT OF MOLECULAR WEIGHT. Rept. 1 of Studies on the Effects of Molecular Weight and Molecular Weight Distribution on the Spinning Property of Concentrated Polyacrylonitrile Solutions. [1962] 16p. 11 refs.
Order from SLA $1.60 62-18041

Trans. of Kobunshi Kagaku (Japan) 1961, v. 18, no. 198, p. 589-595.

DESCRIPTORS: Synthetic fibers, *Plastics, Polymers, *Acrylonitriles, *Molecular weight, Drawing (Machine processing), Coagulation, Nitric acid.

In order to study the effects of molecular weight the drawing properties of coagulated threads of polyacrylonitrile were measured at 100°C. Polyacrylonitrile was prepared by the suspension polymerization method with α,α' - azobisisobutylonitrile as the catalyst. The fractionated samples (M = 40,000~ 297,000) were used for the measurements together with the unfractionated samples ($\overline{M}w$ = 31,500 ~269,000, $\overline{M}w/\overline{M}n$ = 3.0). The coagulated threads were obtained by extruding the concentrated solutions in 70% nitric acid into the coagulating bath (dilute nitric acid) at 0°C. The results obtained show a maximum draw ratio at $\overline{M}w$ = 80,000 and such a tendency was clearyl observed especially in the case of the fractionated polymers. The results were discussed from the view of molecular theory. (Author)

Hager, Karl-Fried.
EXPERIMENTAL STUDIES OF AIR FRICTION IN SPINNING POTS. [1962] [19]p. 33 refs.
Order from SLA $1.60 62-14585

Trans. of Faserforschung und Textiltechnik (Germany) 1956, v. 7, [no. 8] p. 339-345.

DESCRIPTORS: *Gas flow, Resistance, *Friction, *Textile industry, Electric machinery, Mathematical analysis.

The higher electrical energy requirement of pot spinning machines in contrast to the bobbin spinning process is principally caused by friction losses owing to the air flow at the wall of the pot. The air resistance of a spinning pot with and without a jacket was calculated and estimated by experiments. Formulas for the air resistance and experimentally determined coeffi-cients were developed, which made possible a survey of the air friction losses of spinning pots of various dimensions for designing purposes. (Author)

Jörder, H.
A HIGH-VACUUM PROCESS FOR THE METAL-COATING OF TEXTILES. [1962] 11p. (2 figs. omitted) 1 ref.
Order from SLA $1.60 62-14049

Trans. of [Zeitschrift für die Gesamte] Textil-Industrie (West Germany) 1957, v. 59, no. 11 [p. 435-437].

DESCRIPTORS: *Vacuum apparatus, Coatings, *Textiles, *Metal coatings, Clothing.

Schwertassek, Karl.
A SIMPLE METHOD TO DETERMINE THE FIXING DEGREE OF POLYAMIDE AND POLYESTER FIBERS. [1962] 16p. (figs. omitted) 8 refs.
Order from SLA $1.60 62-16460

Trans. of [Faserforschung und Textiltechnik] (Germany) 1959, v. 10, no. 8, p. 387-392.

DESCRIPTORS: Polymers, *Amides, *Esters, *Synthetic fibers, *Silk, Sulfuric acid, Temperature, Separation, *Textiles, Processing.

The temperature is ascertained at which the test fiber dissolves in sulfuric acid of certain concentration within 4 to 5 or 3 to 4 seconds. The test was carried out macroscopically. Its application is described on polyamide-6- and polyamide-66 fibers as well as polyester silk. The method is simple in its execution and thus suitable for a running work control. (Author)

Paints and Finishes

Berthold, R.
HANDY GAGE OF HIGH ACCURACY FOR THE MEASUREMENT OF THICKNESS OF COATINGS. [1962] 6p. (refs. formulae figs. omitted).
Order from SLA $1.10 62-16930

Trans. of V[erein] D[eutscher] I[ngenieure]. Z[ei]ts-[chrift] (West Germany) 1949, v. 91, no. 18, p. 476-478.

DESCRIPTORS: *Coatings, Thickness, Gages, Measurement.

Fritz, I. C.
"COLD ZINC": A NEW REMARKABLE SURFACE PROTECTION. [1962] 5p. 12 refs.
Order from SLA $1.10 62-16984

Trans. of Werkstoffe und Korrosion (West Germany) 1955 [v. 6, no. 11] p. 521-523.

DESCRIPTORS: *Zinc coatings, Steel, Surfaces, Cast iron, *Corrosion inhibition.

H., J.
AN ELECTROLYTIC METHOD OF MEASURING THE POROSITY OF METALLIC COATINGS. [1962] [6]p. 3 refs.
Order from SLA $1.10 62-14453

Trans. from Electronique Industrielle (France) n.d., p. 270-271.

DESCRIPTORS: *Metal coatings, Porosity, Electronic equipment, Corrosion.

Photographic Materials

CHROMIUM-FREE POSITIVE AND NEGATIVE COPYING PROCESS ON ASTRALON WITH OZASOL SOLUTION 9/49. 27 Mar 56 [2]p.
Order from SLA $1.10 62-10543

Trans. of an unidentified German language mono., pub. by Kalle and Co., Wiesbaden, Bieberich, Feb 45.

DESCRIPTORS: *Photographic emulsions, *Dyes, Foils, Lithography.

Dannberg, Wolf.
THE NEW ZEISS 5.6/1000 MIRROR LENS (Das Neue Zeiss-Spiegelobjektiv 5,6/1000). 31 Jan 61 [7]p. JPRS: 7670.
Order from OTS or SLA $1.10 62-19374

Trans. of die Wirtschaft, Berlin (Germany) 1960, v. 15, no. 35, p. 17.

DESCRIPTORS: *Optical equipment, *Lenses, Photographic lenses, Telephoto lenses, *Cameras, Manufacturing methods.

Kheinman, A. S.
MECHANISM OF AGING OF INFRARED EMULSIONS. [1962] 3p. 8 refs.
Order from OTS or SLA $1.10 62-10973

Trans. of Zhurnal Nauchnoi i Prikladnoi Fotografii i Kinematografii (USSR) 1960, v. 5, no. 4, p. 297-298.

DESCRIPTORS: *Photographic emulsions, Aging.

The aging of high-speed negative emulsions (not sensitized with gold and containing no other additions, except 5-methyl-7-hydroxy-2, 3, 4-triazaindolizine) sensitized with three different tricarbocyanine dyes, was investigated. The pBr value of the emulsion was 3.5 ± 0.1 and the pH value was 7 ± 0.1. The results concern the initial period of the fastest decrease in the speed S, i.e., storage up to approximately 30 days, during which the S of emulsions, which did not contain any dye, did not change. The values of both the internal and surface S decreased with aging.

Romer, Witold.
PHOTOGRAPHIC GRANULARITY AND GRANULATION (A DISCUSSION). [1962] 35p. (figs. omitted) 55 refs.
Order from SLA $3.60 62-16736

Trans. of Sciences et Industries Photographiques (France) 1959 [ser. 2] v. 30, p. 3-12.

DESCRIPTORS: *Photographic emulsions, Transmission, Reflection, Illumination, Microphotometers, Optical images, Visual acuity, Visual perception, Nystagmus, Physiology, Photographic equipment, Photographic lenses.

An analysis is made of the series of experimental studies carried out on this subject at the Kodak Laboratories in Rochester. The validity of the concept of granularity adopted as a basis for comparison is discussed. A study is made of the influence of a variable and indefinite lens opening in illuminating the sample in the instrument constructed. A supposition is made that considerable discordance occur as a result in experimental findings. It is shown that the field of exposure adopted for the microdensitometric evaluation of granularity, and also for its conformity with the subjective sensation of granulation, is based on erroneous hypothesis. As a result, some of the principal results are ill-founded. The problem of instrumental evaluation of granularity, in accordance with the granulation is discussed. (Author)

METALIZING OF PLASTICS. [1962] 3p. (3 figs. refs. omitted).
Order from SLA $1.10 62-18150

Trans. of Metall (West Germany) 1954 [v. 8, no. 9] p. 675-676.

DESCRIPTORS: Plastics, *Metals, *Electroplating, Silver plating, *Vapor plating.

PROPERTIES AND PROCESSING OF POLYPROPYLENE (Eigenschaften und Verarbeitung von Polypropylen). [1962] [15]p. (foreign text included) 3 refs.
Order from SLA $1.60 62-14312

Trans. of Kunststoffe (West Germany) 1961, v. 51, no. 6, p. 338-340.

DESCRIPTORS: Plastics, *Polymers, *Propenes, Physical properties, Density, Viscosity, Stresses, Permeability, Molding, *Plastic films, *Synthetic fibers.

As, in the German language, reports on polypropylene have been sparse and isolated, we endeavor [here] to abstract the American publication in more detail.

Bessonov, M. I., Zakharov, S. K., and Kuvshinskii, E. V.
DETERMINATION OF SOME OF THE MECHANICAL PROPERTIES OF PLASTICS USING MICRO-SPECIMENS. [1962] [7]p. 5 refs. [DSIR] NLL M.6309.
Order from OTS or SLA $1.10 62-25947

Trans. of #Vestnik Mashinostroeniya (USSR) 1960 [v. 40] no. 7, p. 41-45.

DESCRIPTORS: *Plastics, Mechanical properties, Stresses, Deformation, Tensile properties, Test equipment, *Thermostats, *Cryostats.

Blas, L.
ANALYSIS OF PLASTICS. [1962] 14p.
Order from SLA $1.60 62-18153

Trans. of Ion (Spain) [1947] v. 7, no. 71, p. 375-381.

DESCRIPTORS: *Plastics, *Chemical analysis, Solubility, Fluorescence, Heating, Hydrolysis, Density.

Dilke, Max Henry.
PROCESS FOR PRODUCING TRANSPARENT FILMS FROM POLYETHYLENE. 2 Feb 62, 7p. 8 refs.
Order from OTS or SLA $1.10 62-14266

Trans. of German patent 1,101,753, by The Distillers Co. Ltd., Great Britain, appl. 12 Jan 57 [pub.] 9 Mar 61.

DESCRIPTORS: *Ethylenes, Polymers, Thin films, Foils, Production, *Optical plastics

A process is proposed for producing transparent films from polyethylene and compatible liquids, characterized in that sheets or films from a mixture of linear polyethylene of a density of at least 0.95 and compatible inert liquids with a boiling point above the softening point above the softening point of the polyethylene are stretched at a temperature below the softening point of the polyethylene.

Hashimoto, Shizunobu; Furukawa, Isao; and Yanagawa, Tetsunosuke.
SYNTHESIS OF ORGANO-PHOSPHORUS ACID DIALLYL ESTERS AND THE INFLUENCE OF CHEMICAL STRUCTURE ON THE POLYMERIZATION CHARACTERISTICS AND FLAME RESISTANCE OF THE RESINS. [1962] 20p. 12 refs.
Order from SLA $1.60 62-18039

Trans. of Kogyo Kagaku Zasshi (Japan) 1961, v. 64, no. 9, p. 1682-1686.

DESCRIPTORS: Plastics, *Resins, Synthesis, *Polymerization, Organic acids, *Phosphorus, *Allyl radicals, *Esters, Fire resistant coatings, Solvent action.

Four types of organo-phosphorus acid diallyl esters were synthesized from acid chlorides, then BPO was added to these and polymerization was carried out; their polymerization characteristics and the physical properties of the product resins were compared and investigated. As a rule, phosphonates became hard resins and phosphates became soft resins, but phosphonites and phosphites did not reach the point of solidifying. As for the solvent-resistance of the phosphonates, nearly no change was noted [by solvents] except for chloroform. Flame resistance was best in the case of phosphonates and these were self-extinguishing, but phosphates did not give good results. In view of the results of the rates of thermal decomposition, the difference between these two was estimated to be related to the ease or difficulty of release of side-chains in the polymer chain members by heating. (Author)

Hummel, D. and Schneider, Christel.
GRAFT-POLYMERIZATION ON POLYMETHYLMETHACRYLATE UNDER THE INFLUENCE OF ^{60}Co-GAMMA-RADIATION. [1962] 2p.
Order from SLA $1.10 62-14338

Trans. of German language article from unidentified source, n.d.

DESCRIPTORS: *Acrylic resins, Polymers, *Cobalt, Radiation effects, *Radioactive isotopes, *Gamma rays, Polymerization.

Ide, Fumio.
THE MOLECULAR WEIGHT OF POLYMETHYL METHACRYLATE IN CELLULOSE-METHYL METHACRYLATE GRAFT COPOLYMER. Rept. no. 8 of Studies on Vinyl Polymerization. [1962] 15p. 15 refs.
Order from SLA $1.60 62-10689

Trans. of Kogyo Kagaku Zasshi (Japan) 1961, v. 64, no. 8, p. 1489-1493.

DESCRIPTORS: *Acrylic resins, Polymers, Molecular weight, *Cellulose, Plastics.

The relationship between the degree of polymerization and polymerization conditions was investigated with respect to polymethyl methacrylate which had been isolated by sulfuric acid-hydrolyzing cellulose-methyl methacrylate graft copolymer, which had been obtained by using ceric ammonium salt as initiator. The degree of polymerization of grafted polymethyl methacrylate decreased as the catalyst concentration and nitric acid concentration increased, and increased as the polymerization temperature (20~60°C) and monomer concentration increased. As for polymerization time, it [i.e., degree of polymerization] increased in proportion to the polymerization time in the initial period of the polymerization, but demonstrated a constant value past a certain time. As a rule, the degree of polymerization of grafted polymethyl methacrylate was greater than that of the homopolymer. (Author)

Kalkhof-Rose and Bauer.
METHYLACRYLATE MOLDING COMPOUNDS FOR LARGE MOLDED PARTS. [1961] 8p. (3 figs. 2 tables omitted).
Order from SLA $1.10 62-10603

Trans. of Kunststoffe (West Germany) 1957, v. 47, no. 4, p. 156ff.

DESCRIPTORS: *Acrylic resins, Gels, Physical properties, Plastics industry, Molding.

Starting from the known treatment of plastic mixtures of polymeric and monomeric methyl acrylate in dentistry, a technically interesting method has been developed, for obtaining storable molding compounds, and therefrom, molded parts, at low temperatures of about 50°C. and relatively short polymerization times of about 20 minutes. The use of redox systems permits the employment, in addition to methacrylates, of acryl, styrene, and vinyl resins, and of mixed polymers of these, or with acryl and methacryl amide, as long as they form gels with the monomers with swelling. The lower working temperatures of such molding compounds expresses itself in general in a lower energy requirement of the factory, and in improved physical properties of the results obtained, and especially in the absence of frozen in stress conditions. This last circumstance results in an important advance in the production of large molded parts with variable cross section. (Author)

Nischk, Günther and Müller, Erwin.
METHOD FOR THE PRODUCTION OF FIRE-PROOF OR FIRE-RESISTANT SYNTHETICS. [1962] 6p. 2 refs.
Order from OTS or SLA $1.10 62-16272

Trans. of German patent 1,026,522, cl. 39c 16, internat. cl. C 08 g (F 16164 IVb/39c) by Farbenfabriken Bayer Aktiengesellschaft, appl. 17 Nov 54, pat. appl. pub. and issued 20 Mar 58, pat. pub. 18 Sep 58.

DESCRIPTORS: *Inflammable materials, Production Esters, Polymers, Vinyl radicals, Allyl radicals, Chlorine, Isocyanates, *Plastics, Polymerization, Inhibition, *Fire-resistant paints.

The method is characterized by the fact that mixtures of pentachlorophenylmonoglycerol ether and/or the epoxide of this compound with tetrachlorophthalic acid in combination with other saturated or unsaturated components forming polyesters are converted into polyesters and that the amount of Cl-containing substances is calculated such that the polyester formed has a total chlorine-content of a minimum of 20%.

Sartorius, Rudolf and Schülde, Felix.
METHOD FOR THE PREPARATION OF SELF-EXTINGUISHING SYNTHETICS. [1962] 6p. 4 refs.
Order from OTS or SLA $1.10 62-16271

Trans. of German patent 1,033,409, cl. 39b 22/10, internat. cl. C 08f; g (F 21293 IVb/39b) by Farbwerke Hoechst Aktiengesellschaft, appl. 22 Sep 56, pat. appl. pub. and issued 3 July 58, pat. pub. 24 Dec 59.

DESCRIPTORS: *Plastics, Plasticizers, Preparation Resins, Mixtures, Polymers, Esters, Polymerization, Hydrochloric acid, Molding, Chemical reactions.

A method is offered for the preparation of self-extinguishing synthetics from halogen-free unsaturated polyesters, monomer allyl esters and, if necessary, monomer vinyl compounds. The method is characterized by the fact that a solution of the unsaturated polyester in the monomer compounds containing 5 to 25% allyltrichloracetate is hardened in the presence of antimony trioxide in the amount of 2 to 6% of the mass in molds by customary polymerization catalysts and accelerators.

Schenkel, G.
DIES FOR TUBING AND CROSS HEADS. Pt. 1 of Extruder Dies. [1962] [15]p. (figs. omitted) 22 refs.
Order from SLA $1.60 62-16450

Trans. of Kunststoffe (West Germany) 1956, v. 46, no. 4, p. 176-180.

DESCRIPTORS: *Dies, *Machine tools, *Plastics, *Plastic tubing, Processing, *Extrusion.

Schnell, H.
POLYCARBONATES, A GROUP OF NOVEL THERMOPLASTICS (THE SYNTHESIS AND PROPERTIES OF AROMATIC POLYESTERS OF CARBONIC ACID). [1962] 23p. (8 figs. omitted) 49 refs.
Order from SLA $2.60 62-16455

Trans. of Angewandte Chemie (West Germany) 1956, v. 68, no. 20, p. 633-640.
Other translations are available from SLA $4.60 as 61-16739 [1961] 43p. and from RIS $32.00 as RIS-61053, 26 June 59, 27p.

DESCRIPTORS: *Plastics, *Carbonates, Polymers, Esters, *Carbonic acids, Synthesis, *Thermoplastics

For abstract see Technical Translations 2: 813, 1959.

Schröter, G. A. and Riegger, P.
SYNTHESIS OF NEW LIGHT-SENSITIVE PLASTICS. [1962] [7]p. 13 refs.
Order from SLA $1.10 62-16449

Trans. of Kunststoffe (West Germany) 1954, v. 44 [no. 7] p. 278[-280].

DESCRIPTORS: Synthesis, *Plastics, Light, Sensitivity, *Photochemistry.

Tessmar, Klauss.
ACRYLONITRILE AS A COMONOMER IN HARD ACRYLIC PLASTICS. [1962] 7p. (figs. tables, refs. omitted).
Order from SLA $1.10 62-16533

Trans. of Kunststoffe (West Germany) 1953, v. 43 [no. 12] p. 496-502.

DESCRIPTORS: *Acrylonitriles, *Plastics, *Acrylic resins, Polymers.

Williams, Leslie and Sidlow, Richard.
USE OF SOLUBLE COMPOUNDS OF ANTIMONY AS FIRE-PROOFING AGENT IN HARDENABLE, HALIDE-CONTAINING POLYESTERS. [1962] 16p. 3 refs.
Order from OTS or SLA $1.60 62-16282

Trans. of German patent 1,070,373, S 53098 IVb/39b, cl. 39b 22/10, internat. cl. C 08 g, by Peter Spence & Sons Ltd. (Gt. Brit.) appl. 11 Apr 57 appl. pub. and issued 3 Dec 59 (priority claimed: Gt. Brit. from 12 Apr and 4 Sep 56).

DESCRIPTORS: *Esters, *Polymers, *Halides, *Antimony compounds, Solubility, Plastics, Hardenability, Acylation, Chemical bonds, *Heat-resistant polymers.

A patent is claimed for the use of soluble and, in a given case, partly acylated antimony alcoholates as fire-proofing agents in hardenable halide-containing polyester mixtures, consisting of unsaturated polyesters with polymerized monomer unsaturated compounds and, in a given case, highly chlorinated inert compounds.

Rubber and Elastomers

MATERIALS OF RUBBER SHEETS. [1955] 10p. (figs omitted).
Order from OTS or SLA $1.10 62-16380

Trans. of French patent 818, 399, gr. 14, cl. 5, by International Latex Processes Ltd. [Gt. Brit.] appl. 26 Feb 37, issued 14 June 37, pub. 24 Sep 37 (appl. of pat. filed U.S., 29 Feb 36, declaration of applicant).

DESCRIPTORS: *Storage batteries, Production, Sheets. *Rubber, Vulcanization, Materials

Kawaguchi, Tatsuro.
STRAINING OF HIGH POLYMERS NEAR THEIR GLASS TEMPERATURE. [1962] 13p. 14 refs.
Order from SLA $1.60 62-10690

Trans. of Kobunshi Kagaku (Japan) 1961, v. 18, no. 194, p. 351-356.
Another trans. is available from ATS $13.75 as ATS-92N56J [1961] 9p.

DESCRIPTORS: *Polymers, Molecular structure, Deformation, Repture, Drawing (Machine processing), Temperature, Stresses *Rubber, Synthetic fibers, Tensile properties, Statistical functions, Phase transitions, *Crystallization.

The strength-elongation behaviors of high polymers in the glassy state were studied using rubber as the sample, and the following results were obtained. As the total number of molecular chain elements penetrating through the cross-section decreased accompanying drawing, yield strength dropped. Therefore, necking could be made to develop even without thermal effect. Deformation of molecular chains in the glassy state could be expressed as the rupture of the secondary network. Although only one yield point developed in an ideal hot-drawn product, two yield points always developed in a drawn product obtained by cold-drawing. (Author)

Wood and Paper

TESTING OF PAPER AND BOARD: METHOD OF SAMPLING BOARD IN A CONDITION FOR TESTING. [1962] 5p.
Order from OTS or SLA $1.10 62-16512

Trans. of French Standard NF Q 03-020, May 61.

DESCRIPTORS: Paper, *Fiberboard, Standards, Sampling, Test methods.

Becker, Gunther and Gersonde, Martin.
RESULTS OF COMPARATIVE INVESTIGATIONS INTO THE PROTECTION OF TIMBER POLES WITH SALTS. [Paper] read at the Overhead Transmission Conference of the Vereinigung Deutscher Elektrizitätswerke, Dortmund, 26 Sep 60. [1962] 31p. 27 refs.
Order from SLA $3.60 62-14827

Trans. of Elektrizitätswirtschaft (West Germany) 1960, v. 59, no. 24, p. 854-864.

DESCRIPTORS: *Wood, *Preservation, Salts, Electric power production, Transmission lines, *Fluorides. *Telephone poles.

Borisek, R., Schmied, J., and Enderst, V.
INCREASING THE RATE OF SULPHITE COOKING. [1962] [14]p.
Order from SLA $1.60 62-16156

Trans. of mono. (paper) given at the European Tappi Meeting, Lucerne, 1960.

DESCRIPTORS: *Sulfites, *Wood pulp, Processing, *Paper, Production, Phase transitions, Quality control, Lignin.

In the transition period between conventional Ca-Bi sulphite cooking (Ca-Bi) and Na-Bi sulphite cooking (Na-Bi) with complete chemical recovery, various improvements of the Ca-Bi cooking have been obtained. A modification of Ca-bisulphite cooking was worked out involving pre-impregnation of the chips with a solution of Na_2SO_3-$NaHSO_3$ (Na-Ca-Bi), and this method was tested on the commercial scale. The chips are pre-impregnated with a 15 to 20% Na_2SO_3 solution in the Swanson apparatus during filling of the digester, or in any suitable equipment such as a screw impregnator. The sulphite consumption is between 2-5% on b.d. wood depending on Ca-base acid used and temperature chart of the cook. A comparison between Ca-Bi, Na-Ca-Bi, Na-Bi and Ca-Na-Bi (Ca base acid + Na_2SO_3) and the Kramfors method under similar conditions of time, temperature and concentration shows that the results of the Na-Ca-Bi method are better than those of the Ca-Bi and Ca-Na-Bi methods, and approach those of the Na-Bi method. It is possible therefore to produce paper and chemical pulps of superior qualities in older sulphite mills without complete chemical recovery. During cooking of viscose pulps recondensation of lignin could be avoided by maintaining milder cooking conditions at temperature. (Author)

Dihsmaier, E.
ORGANIC-INORGANIC FIBROUS MIXTURES AND THEIR BEHAVIOUR ON IMPREGNATION WITH PARAFFIN AND BITUMEN EMULSIONS. [1961] [4]p.
Order from SLA $1.10 62-10593

Trans. of Wochenblatt f[ür] Papierfabr[ikation] (West Germany) 1961 [v. 89] no. 19, p. 930 (and explanatory letter by author].

DESCRIPTORS: Paper, *Glass textiles, *Waxes, *Bitumens, Colloids, Impregnation.

Golovanov, N. G.
NUEVO TIPO DE MATERIAS PRIMAS PARA LA FABRICACION DE CARTON (Novyi Vid Syr'ya dlya Proizvodstva Kartona) (New Raw Materials for Cardboard Manufacture). 9p. CID: 62-92. (text in Spanish).
Order from OTS or ETC $0.95 62-26292

Trans. of Bumazhnaya Promyshlennost' (USSR) 1955, v. 30, no. 8, p. 22-23.

DESCRIPTORS: *Fiberboard, Materials.

Huggenberger, L.
MEASURING THE FLAT CRUSH STRENGTH OF CORRUGATED SAMPLES. Mar 62, 2p. (3 figs. omitted) 3 refs.
Order from SLA $1.10 62-16499

Trans. of Allgem[eine] Papier-Rundschau (West Germany) 1962, no. 3, p. 134.

DESCRIPTORS: Measurement, *Crusher gages, *Pressure, Paper, Laminates, Mechanical properties.

Jacquelin, G.
AN INVESTIGATION OF THE FLOCCULATION OF MOVING FIBROUS SUSPENSIONS. 17 May 62, 25p. (17 figs. omitted) 13 refs.
Order from SLA $2.60 62-16496

Trans. of A[ssociation] T[echnique de l'] I[ndustrie] P[apetière]. Bulletin (France) 1961, no. 4, p. 287-304

DESCRIPTORS: *Paper, *Wood pulp fibers, Mechanical properties, Temperature, Additives, Sulfate pulp, Wood pulp, Processing, Sulfites.

Mizutani, Hikohiro, Nakamura, Nanao, and Kubo, Yasuo.
DEVELOPMENT OF CYANOETHYLATED KRAFT PAPER AND ITS THERMAL LIFE. [1962] 20p. (20 figs. omitted) 4 refs.
Order from SLA $1.60 62-14760

Trans. of Toshiba Review (Japan) 1961 [v. 16, no. 9] p. 1161-1166.

DESCRIPTORS: *Cellulose, Processing, *Paper, Production, *Cyano radicals, *Ethylenes, Chemical reactions, Electrical properties, Stability, Temperature, Insulating materials, Electric insulation.

A method for the cyanoethylation of cellulose has been described. The heat stability of cyanoethylated kraft paper has been shown to be much superior to that of normal kraft paper. The effects of the processed paper on the aging of the materials usually found in oil-filled transformers is small compared to those of the unprocessed paper. (Author)

Österberg, L.
PAPER WEB TAKE-OFF FROM PRESS ROLLS. May 62, 15p. (16 figs. omitted) 24 refs.
Order from SLA $1.60 62-16615

Trans. of Svensk Pappers-tidning, 1962, v. 65, no. 6, p. 222-233.

DESCRIPTORS: *Paper, *Wood pulp machines, Adhesion, Tensile properties, Production, Quality control.

Pape, E.
OPERATING EXPERIENCES WITH THE ELIMINATION OR REDUCTION OF PITCH TROUBLES. Mar 62, 5p.
Order from SLA $1.10 62-16502

Trans. of Zellstoff und Papier (Germany) 1960, v. 9, no. 8, p. 309-312.

DESCRIPTORS: *Pitch, Reduction, *Paper, Processing, *Resins, Wood pulp machines, Costs

Sadler, H. and Nitsch, H.
PULP PRODUCTION IN HIGHER YIELDS ACCORDING TO THE SULPHITE METHOD. [1962] 23p. (8 figs. omitted) 13 refs.
Order from SLA $2.60 62-16073

Trans. of Holzforschung und Holzverwertung (Austria) 1961, v. 13, no. 3, p. 41-49.

DESCRIPTORS: *Sulfate pulp, *Wood pulp, Sulfites, Production, Bleaching, Temperature, *Paper, Processing.

By the employment of lower digestion temperatures and longer finish-cooking times it was possible to obtain pulps in a yield of 54.1 to 74.3% in the unbleached and unsorted state. When the sorting is omitted and the digestion is followed by a three-stage bleaching, the yields of bleached and sorted stuff go down to 49.7 to to 56.9%. By the bleaching a considerable share of the splinters is converted to fibers which can still be used. The chemical bleaching loss consists not only of the quantity of dissolved-out lignin but it also still remains a part of the carbohydrates. At longer digestion times the dissolved-out carbohydrates constitute a considerable share of the bleaching loss. According to these investigations it must be possible to obtain a yield of bleached stuff of about 55% if a sorting of the unbleached stuff is omitted and the sorting follows the bleaching, at which the bleaching process converts a large part of the coarse stuff to useful fibers. The question remains open as to the extent to which a better effect with respect to the attained whiteness degree and paper strength can be obtained by a modified multistage bleaching. (Author)

MATHEMATICS

Barbashin, E. A. and Krasovskii, N. N.
ON THE EXISTENCE OF LYAPUNOV FUNCTIONS IN THE CASE OF ASYMPTOTIC STABILITY IN THE LARGE. [1961] [13]p. 5 refs.
Order from OTS or SLA $1.60 62-10184

Trans. of Prikladnaya Matematika i Mekhanika (USSR) 1954, v. 18, p. 345-350.
Another trans. is available from OTS $1.60 as AD-AD-264 150, STL-TR-61-5110-20, May 61, 12p.

DESCRIPTORS: Satellite vehicle trajectories, *Flight paths, *Spheres, *Stability, Motion, Functions, Perturbation theory, Differential equations, Partial differential equations

Definitions on stability are given among which is included a detailed definition of stability in the large of two systems with time delay. Two theorems are stated with detailed proofs for solution of these systems. From the proof of theorem two, the question of the stability of a system of equations with respect to time delays is similar to the problem of the stability of motion for continuously operative disturbances. (ASTIA abstract)

Fridman, V. M.
ITERATIVE PROCESS WITH MINIMAL ERRORS FOR NON-LINEAR OPERATOR EQUATIONS. [1962] 8p. 2 refs.
Order from OTS or SLA $1.10 62-16596

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1961, v. 139, no. 5, p. 1063-1066.

DESCRIPTORS: *Operators (Mathematics), *Nonlinear differential equations, Solutions, Errors.

The existence and uniqueness of the solution of the equation $Lx = 0$ is shown for the case of a continuous differentiable (in the sense of Frechet) operation Lx.

Pontryagin, L. S.
ORDINARY DIFFERENTIAL EQUATIONS, tr. by Leonas Kacinskas and Walter B. Counts. 1962, 298p.
Order from Addison-Wesley Pub. Co., Inc., Reading, Mass.

Trans. of mono. [Obyknovennye Differentsial'nye Uravneniya, Moscow, 1961, 311p.].

DESCRIPTORS: *Mathematics, *Textbooks, *Differential equations, Equations, Algebra, Matrix algebra, Automatic, Control, Oscillation, Theory.

Povarov, G. N.
ON THE FUNCTIONAL SEPARABILITY OF BOOLEAN FUNCTIONS. [1961] 5p. 4 refs. MDF P-118.
Order from OTS $0.50 62-11517

Trans. of A[kademiya] N[auk] SSSR. Doklady, 1954, v. 94, no. 5, p. 801-803.
Another trans. is available from CTS(Chem) $4.20 as CTS(Chem)-127 [1960] 1200 words.

DESCRIPTORS: *Special functions, Functional analysis, Relays, Switching circuits.

A criterion of the functional separability of Boolean functions is proposed and used to find relations between functionally separable and symmetric Boolean functions.

Rutishauser, Heinz.
THE QUOTIENT-DIFFERENCE ALGORITHM. [1962] 32p. 8 refs.
Order from SLA $3.60 62-16586

Trans. of Zeit[schrift] f[ür] Angew[andte] Math[ematik] u[nd] Phys[ik] (Switzerland) 1954, v. 5, p. 233-251

DESCRIPTORS: *Numerical methods and procedures, Matrix algebra, Polynomials, Continued fractions.

Shimanov, S. N.
ON THE STABILITY OF THE SOLUTION OF A NONLINEAR EQUATION OF THE THIRD ORDER. [1961] [10]p. 4 refs.
Order from OTS or SLA $1.10 62-10181

Trans. of Prikladnaya Matematika i Mekhanika (USSR) 1953, v. 17, no. 3, p. 369-372.
Another trans. is available from OTS $1.10 as AD-264 174. STL-TR-61-5110-2, Mar 61, 10p.

DESCRIPTORS: *Satellite vehicle trajectories, *Nonlinear differential equations, Functions, Statistical tests, *Perturbation theory, Nonlinear systems.

The stability is investigated of the null solution of a system characterized by the third-order nonlinear differential equation $\dddot{x} + f(x, \dot{x})\ddot{x} + b\dot{x} + cx = 0$, (1) which is equivalent to $\dot{x} = y$, $\dot{y} = z$, and $\dot{z} = -f(x, y)z - by - cx$. A proof is given for the theorem that, if $b > 0$, $c > 0$ and the function $f(x, y)$ satisfies the conditions $f(x, y) > c/b$ and $y(\partial f/\partial x) \leq 0$ for all values of its arguments, then the trivial solution of equation (1) is asymptotically stable for all initial perturbations. The theorem is proved by consideration of the positive-definite function and its time derivative with an arbitrary trajectory of the phase.

Vekua, I. N.
GENERALIZED ANALYTIC FUNCTIONS, tr. ed. by Ian N. Sneddon. International Series of Monographs in Pure and Applied Mathematics, v. 25. 1962, 668p. 97 refs.
Order from Addison-Wesley Publishing Co., Inc., Reading, Mass.

Trans. of mono. Obobshchennye Analiticheskie Funktsii, Moscow, 1959 [628p.].

DESCRIPTORS: *Mathematics, *Textbooks, *Functions, Theory, Elasticity, Structural shells, Convex bodies, Differential geometry, Geometry.

Yakubovich, V. A.
ON ONE CLASS OF NONLINEAR DIFFERENTIAL EQUATIONS. [1961] [8]p. 5 refs.
Order from OTS or SLA $1.10 62-10171

Trans. of Akademiya Nauk SSSR. Doklady, 1957, v. 117, no. 1, p. 44-46.
Another trans. is available from OTS $1.10 as AD-264 069, STL-TR-61-5110-18, May 61, 8p.

DESCRIPTORS: *Non-linear differential equations, Theory, Matrix algebra, Vector analysis, Numbers, Special functions.

Lur'es method for determining the stability in the large of solutions of nonlinear differential equations in invariance form is presented. The question of stability is considered in the large of the null solution, x equals S equals 0, of the following system of differential equations, (1) dx equals Ax plus aR(S), for S R(S), for S R(S) greater than zero and (2) dS equals (b, x)-P R(S), for R(0) equal to 0, by employing a Lyapunov function of the form V equals (Hx, x) plus the integral R(u) du, where H* equals H and u varies from 0 to S. Three theorems are stated which give the sufficient conditions for the null solution to be stable in the large one of the theorems states necessary and sufficient conditions. (ASTIA abstract)

Computing Devices

MAGNETIC ELEMENTS. 12 June 62 [342]p. 51 refs. JPRS: 14224.
Order from OTS or SLA $19.75 62-25470

Trans. of mono. Magnitnye Elementy: Sbornik Statei, Moscow, 1960, 313p.

DESCRIPTORS: *Computers, *Magnetic materials, Ferrites, *Hysteresis, *Ferrite cores, *Magnetostriction, *Memory devices, Programming, Coding, *Data storage systems, *Oscillographs.

Contents:
Arbitrary remagnetization of Mn-Mg and Ni-Zn ferrites, by V. V. Kobelev and I. I. Nadashkevich
Pulse remagnetization of ferrite cores, by V. V. Bardizh
(Mathematics--Computing Devices, TT, v. 8, no. 9)
Calculating remagnetization curves for ferrite cores, by V. V. Bardizh and V. V. Kobelev
Characteristics of cores with rectangular hysteresis loops, by V. V. Bardizh
An apparatus for investigating magnetic cores, by Yu. I. Vizun
An oscillographic installation for determining hysteresis loops of small ferrite cores, by V. V. Kobelev
Stability of operation of magnetic two-stage shift registers, by V. V. Kobelev
Operating register using magnetostrictive delay lines, by E. F. Berezhnoi
Magnetic memory device with programmed control, by V. V. Kobelev and Yu. I. Vizun
Magnetic memory device with differentiators on ribbon cores, by V. V. Bardizh
Magnetostrictive-delay-line storage unit with intermediate readout of code, by E. F. Berezhnoi
Adapting transfluxors in memory and permanent storage devices, by S. V. Bachin
Problems of designing magnetic permanent storage devices, by Yu. I. Vizun
An oscillographic installation for determining hysteresis loops of small ferrite cores (1959) by V. V. Kobelev: supplement to the article.

Kanashevicha, A.
THE TALKING AUTOMAT. 27 Mar 62 [4]p. FTD-TT-62-217.
Order from OTS or SLA $1.10 62-24027

Unedited rough draft trans. from Pravda [Moscow] (USSR) 1961, no. 350(15840) p. 4.

DESCRIPTORS: *Data processing systems, Teaching machines, Programming, *Computers.

MECHANICS

SOVIET ABSTRACTS: MECHANICS, 1961, NO. 2, ABSTRACTS 2A6-2V497. [1962] [149]p.
Order from OTS or SLA $11.00 62-32142

Trans. of Soviet abstracts from Referativnyi Zhurnal. Mekhanika (USSR) 1961, no. 2.

DESCRIPTORS: Abstracting, *Mechanics, Fluid mechanics, Hydrodynamics, Hydraulic research, Elasticity, Plasticity.

Barenblatt, G. I.
ON CERTAIN PROBLEMS OF THE THEORY OF ELASTICITY THAT ARISE IN THE INVESTIGATION OF THE MECHANISM OF HYDRAULIC RUPTURE OF AN OIL-BEARING LAYER (O Nekotorykh Zadachakh Teorii Uprugosti, Voznikayushchikh pri Issledovanii Mekhanizma Gidravlicheskogo Razryva Neftenosnogo Plasta). [1962] [27]p. (foreign text included) 12 refs.
Order from OTS or SLA $2.60 62-14583

Trans. of Prikladnaya Matematika i Mekhanika (USSR) 1956, v. 20 [no. 4] p. 475-486.

DESCRIPTORS: *Elasticity, Theory, Petroleum, Sources, Rock, Fracture (Mechanics).

A clarification is presented of the hypothesis of S. A. Christianovich (Akad. Nauk SSSR Otdel. Tekh. Nauk Izvestia 1955: no. 5 and 1955: no. 11) from various points of view in the example of the forming of a flat crack by concentrated forces, and the hypothesis is applied to the solution of certain axial symmetrical problems that arise in the investigation of the formation, by means of a non-filtered liquid, of horizontal cracks in rocks in the process of hydraulic rupture of an oil-bearing layer.

Ivlev, D. D.
BUCKLING OF ECCENTRIC PIPES. [1961] 7p. 4 refs. MDF I-113.
Order from OTS $0.50 62-11283

Trans. of A[kademiya] N[auk] SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izvestiya, 1956, no. 10, p. 112-116.

DESCRIPTORS: *Pipes, Deformation, Plasticity.

The linearized equations of the Mises theory of plastic flow are used to study the beginning of the formation of a bulge in a pipe of small eccentricity acted upon by an internal pressure. The elastic deformations are considered to be negligibly small in comparison with the plastic deformations. (Author)

Khetaguri, S.
TIME OF GREATER VELOCITIES. 30 Apr 62 [7]p. FTD-TT-62-408.
Order from OTS or SLA $1.10 62-25839

Unedited rough draft trans. from Zarya Vostoka (USSR) 1961, 2 Dec. p. 2

DESCRIPTORS: Mechanics, *Magnetohydrodynamics, Plastics, *Aerodynamics, *Hydrodynamics, Velocity.

This is a translation of a news reporter's interview with Academician Leonid Ivanovich Sedov on the occasion of Sedov's visit to the city of Tbilisi in Georgia. Sedov's remarks are of a rather general nature, mainly on the role of mechanics in modern science.

Larras, Jean.
EXPERIMENTAL INVESTIGATIONS ON THE BREAKING OF THE WAVES (Recherches Expérimentales sur le Deferlement des Lames). [1962] [40]p. (foreign text included) 8 refs.
Order from SLA $3.60 62-16474

Trans. of Annales des Ponts et Chaussées (France) 1952 [ser. 8] v. 122, p. 525-542.

DESCRIPTORS: *Water waves, *Break-waters, Hydrodynamics, Experimental data.

Aerodynamics and Pneumatics

Chernyi, G. G.
HYPERSONIC FLOW AROUND A SLENDER BLUNT CONE. [1961] 5p. 6 refs. MDF C-113.
Order from OTS or SLA $1.10 62-23230

Trans. of A[kademiya] N[auk] SSSR. Doklady, 1957, v. 115, no. 4, p. 681-683.
Another trans. is available from NRCC as NRCC C-2637.

DESCRIPTORS: *Hypersonic flow, *Blunt bodies, *Conical bodies, Bodies of revolution, Hypersonics.

The problem of the flow around a blunt cone is solved in the same approximate formulation as for the previous case of flow around a slender blunted body of revolution or profile (Akad. Nauk SSSR 114: 721-724, 1957; available in translation from OTS or SLA $1.10 as 62-23229).

Chushkin, P. I.
SUBSONIC FLOW OF A GAS PAST ELLIPSES AND ELLIPSOIDS (Obtekanie Ellipsov i Ellipsoidov Dozvukovym Potokom Gaza). [1962] [57]p. (foreign text included) 12 refs.
Order from OTS or SLA $5.60 62-16095

Trans. of Vychislitel'naya Matematika (USSR) 1957, no. 2, p. 20-44.

DESCRIPTORS: *Gas flow, *Subsonic flow, Numerical analysis, Bodies of revolution, Ellipsoids, Aerodynamics, Boundary layer.

The integral relation method of A. A. Dorodnytsin, which consists of reducing nonlinear two-dimensional problems to numerical integration of systems of ordinary differential equations, are used to compute the subsonic flow of gas past ellipses and ellipsoids of revolution. Trial computations on the Besm computer for the case of symmetric flow at the critical value M_{cr}. A series of ellipses and ellipsoids differing by a relative thickness were worked on and first, second, and third order approximations were computed.

Garkusha-Bozhko, V. S., Balashova, I. M. and others.
METHOD FOR STABILIZING THE DISPERSION OF ALKALI METALS. 14 May 62 [5]p. FTD-TT-62-470.
Order from OTS or SLA $1.10 62-25746

Unedited rough draft trans. of Soviet patent 140067 (689567/23) 19 Dec 60.

DESCRIPTORS: *Alkali metals, Stabilization, Organic solvents, *Carboxylic acids, *Anthracenes, Hydroxides, Additives.

The method of stabilizing dispersions of alkali metals differs in that to increase the stability of such dispersions a mixture of mono-and dicarboxy derivatives of 9.10-dihydroanthracene is used as a stabilizer. (Author)

METALLURGY

GROUP TECHNOLOGY IN MACHINE CONSTRUCTION AND INSTRUMENT CONSTRUCTION. PT. I: BLANKING-SHOP TECHNOLOGY. 30 Apr 62 [65]p. (44 figs. omitted) 4 refs. FTD-TT-61-450.
Order from OTS or SLA $6.60 62-25727

Unedited rough draft trans. of mono. Gruppovaya Tekhnologiya v Mashinostroenii i Priborostroenni, Moscow, 1960, p. 5-41.

DESCRIPTORS: *Machines, Construction, *Machining, *Dies, Hydraulic presses, Casting, Metal forming presses, *Forging, Instrumentation, Liquid metals, Electric machinery, Laminates.

Contents:
Application of the group machining method in liquid stamping and die casting, by Z. G. Mednikov
The group forging method, by P. V. Kamnev.

METALLURGY, METALS, METAL PRODUCTS, AND NONMETALLIC MINERALS, NO. 19. Series 3 of English Abstracts of Selected Articles from Soviet Bloc and Mainland China Technical Journals. Aug 62, 96p.
Order from OTS $25.00/year 61-11142-19
foreign $32.00/year

DESCRIPTORS: *Metallurgy, *Metals, *Minerals, Bibliography, *Abstracts, China.

Consists of abstracts in English.

NEWS ITEMS. [1962] 2p.
Order from OTS or SLA $1.10 62-14139

Abstract trans. of Akademiya Nauk SSSR. Otdelenie Khimicheskikh Nauk. Izvestiya, 1944, no. 4, p. 267-270.

DESCRIPTORS: *Metals, *Machining, *Physical chemistry, Adsorption, Lubrication, Friction, Deformation.

Contents:
Seventy-five years of the Mendeleev periodic law and seventy-five years of the Russian Chemical Society
February session of the Department of Chemistry of the Academy of Sciences U.S.S.R. (review of papers)
Work of the Department of Chemistry on mobilization of natural resources.

SOVIET INDUSTRIAL DEVELOPMENT: [SELECTED] TRANSLATIONS ON SOVIET NONFERROUS METALLURGY (26). 26 July 62 [49]p. 7 refs. JPRS: 14608.
Order from OTS or SLA $4.60 62-32065

Trans. of Promyshlennost' Armenii (USSR) [1962] no. 3, p. 31-36; and Gornyi Zhurnal (USSR) 1962, no. 3, p. 5-12 and 80.

DESCRIPTORS: *Metallurgy, Industrial research, Molybdenum compounds, Sulfides, Ores, Processing, Mining engineering, Mines, Hydrology, Scientific research.

Contents:
Processing of molybdenum sulfide ore at the Kadzharan concentration mill, by B. Lutsenko
A summary of the performance of the ore-mining industry during 1961, by S. M. Meleshkin and A. I. Bunin
Technical progress at the Mirgalimsai mine, by A. F. Tyuryakov
Underground water problems and their solution at the Mirgalimsai deposit, by N. M. Ermolina and others
Report on activities of the Congress of the Scientific-Technical Society for Nonferrous Metallurgy (no. 3) Leningrad, 19-20 Dec 61, by V. A. Frolov.

SOVIET INDUSTRIAL DEVELOPMENT: [SELECTED] TRANSLATIONS ON SOVIET NONFERROUS METALLURGY (35). 16 Aug 62 [19]p. JPRS: 14859.
Order from OTS or SLA $1.60 62-32461

Trans. of Promyshlennost' Armenii (USSR) [1962, v. 5, no. 5] p. 27-29; Razvedka i Okhrana Nedr (USSR) 1962 [v. 28, no. 5] p. 34-36; Byulleten' Tekhniko-Ekonomicheskoi Informatsii (USSR) 1962, no. 4, p. 9-11; and from Ekonomicheskaya Gazeta (USSR) 1962, no. 20[41] p. 28; 1962, no. 21[42].

DESCRIPTORS: *Metallurgy, Industrial research, *Aluminum, Production, Industrial plants, Construction, Failure (Mechanics), *Management engineering, Specifications, *Ores, Deposits, *Mining engineering, Economics, Drills, Boreholes, *Mica, Geological
Contents:
Confusion at the pavlodar aluminum plant construction site, by V. Filinskii
Several difficulties in increasing aluminum production, by L. Arutyunyan
The desirability of revising the specifications for standard-ore reserves being worked at the polymetallic ore fields in Altai, by K. Sh. Utepov and B. I. Lastoveskii
The RBU-50A drilling for the mechanization of manual drilling, by A. N. Natarovskii
The method of mining mica is not on a par with modern technology, by A. Ivoilov and others.

SOVIET INDUSTRIAL DEVELOPMENT: [SELECTED] TRANSLATIONS ON SOVIET FERROUS METALLURGY (56). 1 Aug 62 [14]p. JPRS: 14695.
Order from OTS or SLA $1.60 62-32202

Trans. from Ekonomicheskaya Gazeta (USSR) 1962, no. 17(38) p. 32, 35-36; no. 20[41] p. 31; no. 21[42] p. 12.

DESCRIPTORS: *Industrial production, Iron industry, *Ores, Refineries, Nanganese, Slags, Iron alloys, *Metallurgy, Mining engineering.

Contents:
Miscalculations in construction of Korshunikha ore-concentration mill, by A. Cherkasov
Valuable manganese slag being dumped into the water, by I. Samoilov
Nikopol' ferroalloy plant under construction, by A. Sukhorukov
Needless hauling of cinders to Krivoi Rog southern ore-concentration combine, by D. Rekhel'man
Delays in construction of Almaznaya ferroalloy plant, by S. Ivanenko.

Andreeva, L. P.
EMPLEO DE LOS METODOS ESPECTRALES DE ANALISIS EN EL COMPLEJO METALURGICO DE KUZNETSK (Primeneie Spektral'nykh Metodov Analiza na Kuznetskom Metallurgicheskom Kombinate) (Utilisation of Spectral Methods of Analysis in the Metallurgical Complex of Kuznetsk). 6p. CID: 62-14. (text in Spanish).
Order from OTS or ETC $0.85 62-26214

Trans. of Akademiya Nauk SSSR. Izvestiya, Seriya Fizicheskaya, 1955, v. 19, no. 2, p. 160-161.

DESCRIPTORS: Metallurgy, *Spectrographic analysis.

Antropov, L. I.
SOBRETENSION EN LA ELECTRODEPOSICION DE METALES Y POTENCIALES DE CARGA NULA (Perenapryazhenie pri Elektrovydelenii Metallov i Nulevye Tochki) (Supervoltage in Electrodeposition of Metals and Zero Charge Voltages). 37p. 79 refs. CID: 62-15. (text in Spanish).
Order from OTS or ETC $2.15 62-26215

Trans. of Uspekhi Khimii (USSR) 1956, v. 25, no. 8, p. 1043-1056.

DESCRIPTORS: *Electrodeposition, *Metals, Electric potential.

Arend, H.
DESIGN OF ANODES FOR HARD CHROMIUM PLATING. [1962] 5p. (refs. figs. omitted).
Order from SLA $1.10 62-16916

Trans. of Werkstattstechnik und Maschinenbau (Germany) 1949, v. 39, no. 5, p. 145-147.

DESCRIPTORS: *Chromium plating, *Anodes, Design, *Plating, Corrosion.

Assmus, F. and Pfeifer, F.
RESISTANCE ANOMALIES OF HIGHLY PERMEABLE NI-FE-MO ALLOY. [1962] 11p. (refs. figs. omitted).
Order from SLA $1.60 62-16918

Trans. of Zeitschrift für Metallkunde (West Germany) 1951, v. 42, Oct, p. 294-299.

DESCRIPTORS: *Nickel alloys, *Iron alloys, *Molybdenum alloys, Permeability, Resistance, Heat treatment.

Changes in permeability and electrical resistance due to additional heat-treating were investigated in a certain molybdenum-permalloy alloy. As a parallel phenomenon of the well known increase in permeability there was found an increase in cold-resistance and dependence of the hot-resistance on the rate of cooling or the holding time at constant temperature. The time-temperature law of the change in resistance seems to indicate the presence of a temperature activated basic process with a definite activation energy. (Author)

Bartu, F.
THE DEVELOPMENT OF THE MAERZ-BOELENS FURNACE. [1961] [21]p. 6 refs.
Order from SLA $2.60 62-14371

Trans. of unidentified mono. (brochure) from Maerz Ofenbau A.G., Zürich, June 59.

DESCRIPTORS: *Steel industry, Oil-burning furnaces, *Open hearth furnaces, Heat transfer, Design.

The brochure is intended to give the story of the development of the Maerz-Boelens furnace based on experiences and investigations in different new furnaces. The numerous pictures and the descriptions of the present method of construction should show to the steelworkers the great improvements which can be achieved by the use of the new furnace profile. In particular, attention is drawn to the segmental method of construction because it permits the shortening of the "stand-still" time of the furnace considerably and also lessens the labour required for re-building and repairs. The Maerz-Boelens furnace has long proved itself and can be recommended today to the steelworker as a well matured, well thought out, modern and rational method of construction. (Author)

Bartu, Franz.
OPEN HEARTH FIRING BY NATURAL GAS. [1962] [25]p. (7 figs. omitted).
Order from SLA $2.60 62-14458

Trans. of Revue de Métallurgie (France) 1960, v. 57, no. 2, p. 107-114.

DESCRIPTORS: *Metallurgy, *Natural gas, *Open hearth furnaces, *Fuels, Steel, Production.

Baukloh, W.
PRINCIPLES OF ANNEALING UNDER PROTECTIVE ATMOSPHERES. [1962] 12p. ([refs.] figs. tables omitted).
Order from SLA $1.60 62-16927

Trans. of die Technik (Germany) 1949, v. 4, no. 1, p. 14-19.

DESCRIPTORS: *Annealing, Atmosphere, Exchange reactions, Gases, Metals.

Beaudier, J., Cabane, G., Mouturat, P.
STUDY OF $\alpha \rightleftarrows \beta$ PHASE CHANGES IN A LOW URANIUM-CHROMIUM ALLOY. [1962] [15]p. 3 refs.
Order from SLA $1.60 62-16233

Trans. of Rev[ue de] Métallurg[ie]. Mémoires Scientifiques (France) 1961, v. 58, no. 3, p. 176-182.

DESCRIPTORS: *Uranium alloys, *Chromium alloys, Transformations, Grains (Metallurgy), Single crystals, Reaction kinetics, Crystal structure, Transition temperature, Nuclei.

Becker, G. and Bungardt, K.
IMPROVEMENT OF SCALING RESISTANCE OF HOT-STRENGTH STEELS AND ALLOYS BY SURFACE IMPREGNATION WITH METALS. July 62, 3200 words.
Order from HB $5.60 HB-5561

Trans. of DEW Technische Berichte [sic] 1961, v. 1, no. 4, p. 150-155.

DESCRIPTORS: *Metals, *Oxidation, Scale, Resistance, *Heat resistant alloys, *Steel, Impregnation, Chromizing, Aluminum coatings, Nickel, Cobalt.

Beer, G. and Thomas, H.
CHARACTERISTICS AND STRUCTURE OF IRON-COBALT ALLOYS CONTAINING 50% CO AND SMALL ADDITIONS OF VANADIUM. [1962] 7p. (refs. figs. omitted). 2 refs.
Order from SLA $1.10 62-16922

Trans. of Zeit[schrift] f[ür] Metallkunde (West Germany) 1954 [v. 45, no. 11] p. 651-655.

DESCRIPTORS: *Iron alloys, *Cobalt alloys, *Vanadium alloys, Transformations, Hysteresis, Crystal structure, X-ray diffraction analysis.

In the iron-cobalt-vanadium system, the phase-boundaries in the concentration-range of 50% Co and 0 to 4% V have been determined by means of measurements of the electrical resistance and thermal expansion, by X-ray studies and supplementary photomicrographs. They are for the most part somewhat different from those assumed earlier. The alpha-gamma transformation possesses a strong temperature-hysteresis and is similar in many respects to the irreversible transformation in the well known system iron-nickel. At temperatures below 800°, equilibrium is attained very slowly. The solubility of vanadium in the alpha-mixed crystal, as a function of temperature, gives rise to age-hardening phenomena. Inhomogeneities of structure and of phase-distribution throughout the cross section are probably due to selective oxidation. Some hints are given as to the causes of operating difficulties occurring in the technical manufacture of the alloys. (Author)

Belostotskii, I. Z.
SELECCION DE HORNOS PARA SECADO DE MACHOS PREPARADOS CON MAQUINAS SOPLADORAS DE ARENA (Vybor Pechei dlya Sushki Sterzhnei, Izgotovlyaemykh na Peskoduvnykh Mashinakh) (Furnace Selection for the Drying of Males Prepared with Sand Blasting Machines). 9p. 2 refs. CID : 62-37. (text in Spanish).
Order from OTS or ETC $0.95 62-26237

Trans. of Liteinoe Proizvodstvo (USSR) 1957, no. 2, p. 26-27.

DESCRIPTORS: Drying ovens, Abrasive blasting machines.

Bykov, I. Ya.
MONTAJE DE SERIES DE MOLDES EN LA FUNDICION DE PRECISION (Sborka Model'nykh Komplektov pri Tochnom Lit'e) (Series Arrangement of Molds in Precision Casting). 5p. (foreign text included). CID: 62-55. (text in Spanish).
Order from OTS or ETC $0.80 62-26255

Trans. of Liteinoe Proizvodstvo (USSR) 1955, no. 8, p. 29.

DESCRIPTORS: *Casting, Molding.

Castro, R. and Pheline, J. M.
SPECTROGRAPHIC DETERMINATION OF LOW CONTENTS OF Cu IN IRON AND STEEL. [1962] 14p. (refs. figs. tables omitted).
Order from SLA $1.60 62-16939

Trans. of Spectrochimica Acta (Gt. Brit.) 1947, v. 3, p. 18-39.

DESCRIPTORS: *Iron, *Steel, *Copper, Spectrographic analysis, Alloys, Determination.

Fahlenbrach, H. and Houdremont, E.
INCREASE IN THE INITIAL PERMEABILITY OF LOW-ALLOYED IRON-SILICON- AND IRON-ALUMINIUM ALLOYS BY OXIDIZING ANNEALING AT LOW TEMPERATURES. [1962] 7p. (figs. tables refs. omitted).
Order from SLA $1.10 62-16993

Trans. of Archiv für das Eisenhüttenwesen (West Germany) 1954 [v. 25, no. 7/8] p. 377-381 (V[erein] D[eutscher] E[isenhüttenleute (West Germany). Berichte]-907).

DESCRIPTORS: *Iron alloys, *Silicon alloys, *Aluminum alloys, Permeability, Heat treatment, Annealing, Temperature.

Relationship of the increase in the initial permeability of iron-silicon alloys with 2.5 to 4.5% Si and iron-aluminium alloys with 3 to 5% Al on the heat-treating period, gas atmosphere, sheet thickness, and previous heat-treatment. Metallographic and chemical findings on the heat-treating effect. Studies on other, especially nickel-containing magnetically soft alloys. Reasons for the heat-treating effect. (Author)

Fichtl, W., Seul, V., and Nacken, M.
ALLOY FORMATION DURING ELECTRO-TINPLATING AND SOLDERING TESTS. Mar 62.
Order from BISI £5 5s BISI-2484

Trans. of Stahl [und] Eisen (West Germany) 1961, v. 81, 28 Sep, p. 1322-1329.

DESCRIPTORS: *Tin plating, *Soldering, Alloys, Heat of formation.

Hoff, H. and Dunk, G. von der.
TESTING THE UNIFORMITY OF ZINC COATINGS ON STEEL WIRE BY DIPPING IN $CuSO_4$ SOLUTIONS. [1962] 7p. (figs. refs. omitted).
Order from SLA $1.10 62-16958

Trans. of Arch[iv] f[ür] d[as] Eisenhüttenwesen (West Germany) 1949 [v. 20, no. 3/4] p. 135-138.

DESCRIPTORS: *Zinc coatings, *Steel wire, Processing, Solutions, Copper compounds, Sulfur compounds, Oxides.

Kostron, H.
CONTRIBUTION TO THE TECHNOLOGICAL MECHANICS OF DEEP-DRAWING. [1962] 17p. (figs. refs. equations omitted).
Order from SLA $1.60 62-16959

Trans. of Archiv für das Eisenhüttenwesen (West Germany) 1951 [v. 22, no. 7/8] p. 205-213.

DESCRIPTORS: *Drawing (Machine processing), Metals, Alloys, Sheets, Materials, Stresses, Deformation, Rupture, Tensile properties.

Krichmar, S. I.
INFLUENCE OF THE SURFACE MICROPROFILE CURVATURE ON THE ELECTROCHEMICAL POLISHING OF METALS [Vliyanie Krivizny Mikroprofilya Poverkhnosti na Elektrokhimicheskuyu Polirovku Metallov]. [1961] 5p. 4 refs. MDF K-150.
Order from OTS $0.50 62-11215

Trans. of A[kademiya] N[auk] SSSR. Doklady, 1955, v. 101, no. 2, p. 297-300.
Another trans. is available from SLA as 3918.

DESCRIPTORS: Surface properties, Curved profiles, *Electrolytic polishing, *Metals, Mathematical analysis.

It is shown that if the difference in the energy states of the micro-protuberances and the microvalleys arises basically at the expense of the variation of the local profile curvature, then the expression $(\mu_1 - \mu_2)\ \frac{\rho}{M}\ dV = \gamma\, dS$ can be used with sufficient accuracy to find the dependence of the micro-relief dissolving-velocity on time. Here μ_1 and μ_2 are the chemical potentials of the sections with the greater and lesser curvature; M is the molecular weight; ρ is the density; γ is the surface tension of the solid-liquid boundary; dS is the surface element and dV the volume element.

Marchenko, Yu. N. and Yampol'skii, V. M.
EQUIPMENT FOR GAS-ELECTRIC WELDING OF MAIN PIPE LINES WITHOUT SUPPORTING WHEELS. 4 June 62 [12]p. (3 figs. omitted). FTD-TT-62-521.
Order from OTS or SLA $1.60 62-32415

Unedited rough draft trans. of Byulleten' Tekhniko-Ekonomicheskoi Informatsii (USSR) 1961, no. 10, p. 23-29.

DESCRIPTORS: *Electric welding, *Pipes, Automation, Electric motors, Welding.

Mil'man, B. S., Klochnev, N. I. and others.
HEAT-RESISTING CAST IRON, tr. by L. H. 26 Aug 62, 2p.
Order from OTS or SLA $1.10 62-32925

Trans. from Byulleten' Izobretenii (USSR) 1961, no. 3 (USSR author s certificate 135,500, cl. 18d, 1/20, appl. 16 May 60).

DESCRIPTORS: *Cast iron, *Heat resistant alloys, Aluminum alloys, Graphite.

A heat-resisting cast iron is described containing 18%-25% aluminum used as alloy component. It is characterized in that it is modified for the purpose of obtaining spheroidal graphite structure and a high degree of the yield strength (amounting to 30-34 kg/mm^2 at normal temperature, and 14 kg/mm^2 at 800°) by treatment with cerium in the amount of 0.1% to 0.4%, 0.1% to 0.3% cerium mixed with 0.5% to 0.7% calcium-silicon, or 0.1% to 0.2% cerium mixed with 0.2% to 0.4% magnesium.

Moller, P. and Speidel, H.
NEW DESIGN FOR PLATINUM-TANTALUM ELECTRODES. [1962] [10]p. 1 ref.
Order from SLA $1.10 62-16492

Trans. of Metall (West Germany) 1960, v. 14, no. 7, p. 695-696.

DESCRIPTORS: *Platinum electrodes, Electrodes, *Tantalum, Design, Electrolytic cells, Hydrogen compounds, Peroxides, Production.

Uzhik, G. V.
STRENGTH AND PLASTICITY OF METALS AT LOW TEMPERATURES, tr. by E. Bishop. 1961 [223]p. 58 refs. NLL/24/3/Uzh.
Order from OTS or SLA $15.00 62-15510

Trans. of mono. Prochnost' i Plastichnost' Metallov pri Nizkikh Temperaturakh, Moscow, 1957.

DESCRIPTORS: *Metals, *Plasticity, *Low temperature research, Mechanical properties, Deformation, Resistance, Fracture (Mechanics), Phase transitions, Stresses, Dislocations, *Steel, Chemical analysis, Alloys, Heat treatment, Failure (Mechanics).

Analyses of the causes of catastrophic failure in equipment as a result of temperature drops indicate that the failures usually occur at points of stress concentration. An investigation into the strength conditions at points of stress concentration established that one of the major causes of sudden brittle failure is the fact that the stresses may be redistributed, leading to very substantial increases in the stresses acting at such points, when the equipment is in service under low-temperature conditions. The most important low-temperature strength criterion for a metal is its ability to withstand the propagation of an existing fracture. The method currently used for estimating the low-temperature embrittlement of metals, by tests on series of impact testpieces, must be supplemented by static bent tests on similar testpieces. By studying the strength and ductility of metals at extremely low temperatures it was possible to trace the transition of various ductile materials (constructional steels) from the ductile to the completely brittle condition. Close agreement was found between the values for the brittle fracture strength as found on smooth testpieces at very low temperatures and on notched testpieces at room temperature.

Vasenin, F. I.
THERMOELECTRIC PROPERTIES OF ALLOYS OF THE ANTIMONY-TELLURIUM SYSTEM. [1962] [14]p. 2 refs.
Order from OTS or SLA $1.60 62-18078

Trans. of Zh[urnal] Tekh[nicheskoi] Fiz[iki] (USSR) 1955, v. 25, no. 7, p. 1190-1197.

DESCRIPTORS: Alloys, *Antimony alloys, *Tellurium alloys, Electrical properties, *Thermoelectricity, Electrical conductance.

The investigation of the alloys of the antimony-tellurium system has shown a slow decrease of the thermal

emf curve in the region of the secondary Te-Sb_2Te_3 system which transforms into a sharp drop as the stoichiometry of the compound is approached directly and an increase in the electric conduction without the formation of a maximum. The use of powder metallurgy showed the possibility of obtaining homogeneous antimony-tellurium alloys with increased thermal emf and electric conductivity. The antimony-tellurium alloys of pure metals increase the thermal emf, when heated to 400° C, for a relatively small decrease in the electric conduction, hence $\alpha^2\sigma$ remains constant. The lead impurity lowers the thermal emf of antimony and antimony-tellurium alloys and increases their electric conductivity. Alloy oxidation during heating in air starts at a 270° C temperature. The thermic analysis method showed that the melting tem perature of the intermetallic compounds is below the melting temperature of antimony and equals 612° C.

Vinichenko, P. G. and Kumilin, I. I.
EMPLEO DE MEZCLAS DE SECADO RAPIDO PARA LA FUNDICION DE PIEZAS DE GRANDES DIMENSIONES (Primenenie Bystrosokhnushchikh Smesei pri Otlivke Krupnykh Detalei) (Utilisation of Fast Drying Mixtures in the Casting of big Dimensioned Parts). 5p. CID: 62-67. (text in Spanish).
Order from OTS or ETC $0.80 62-26267

Trans. of Liteinoe Proizvodstvo (USSR) 1959, no. 2, p. 43.

DESCRIPTORS: Casting, *Molding materials.

Ferrous Metals

SOVIET INDUSTRIAL DEVELOPMENT: [SELECTED] TRANSLATIONS ON SOVIET FERROUS METALLURGY (54). 25 July 62 [22]p. JPRS: 14589.
Order from OTS or SLA $2.60 62-32064

Trans. from Stroitel'naya Gazeta (USSR) 1962, 20 Apr, p. 2; 18 May, p. 2; and Pravda, Moscow (USSR) 1962, 25 May.

DESCRIPTORS: *Metallurgy, Industrial research, Structures, *Steel, Manufacturing methods, Natural gas, Oxygen, Metals, Melting, *Liquid metals, Steel castings, Processing.

Contents:
Steel structures should be lot-produced, by I. Kabanov
Natural gas and oxygen powerful accelerators of metal melting, by I. Golikov
The advantages of converters and continuous casting of steel. by P. Sergeev.

SOVIET INDUSTRIAL DEVELOPMENT: [SELECTED] TRANSLATIONS ON SOVIET FERROUS METALLURGY (63). 27 Aug 62 [21]p. JPRS: 14969.
Order from OTS or SLA $2.60 62-32547

Trans. of #Metallurg (USSR) 1962 [v. 7] no. 6, p. 1-2; and from Izvestiya (USSR) 1962, 1 June, p. 4; Pravda, Moscow (USSR) 1962, 31 May, p. 3; Ekonomicheskaya Gazeta (USSR) 1962, no. 22 [43] p. 29.

DESCRIPTORS: *Metallurgy, Industrial research, Automation, Compressed air, Oxygen, Substitutes, Blast furnaces, Production, Economics, Construction, Machine tool industry, Industrial equipment, Iron, Porosity, Castings, Machining, Failure (Mechanics), Metallurgical analysis.
Contents:
Toward a higher level of mechanization and automation in ferrous metallurgy, by V. A. Gerasimenko
Use of compressed air as an oxygen substitute making headway despite opposition, by Vladmir Popov
Forcing blast-furnace production with intensifiers will help finance planned capital construction, by Z. Nekrasov and others
Faulty blast-furnace charging equipment is causing high metal losses, by S. Ivanenko.

SOVIET INDUSTRIAL DEVELOPMENT: [SELECTED] TRANSLATIONS ON SOVIET FERROUS METALLURGY (65). 29 Aug 62 [20]p. JPRS: 15042.
Order from OTS or SLA $1.60 62-32669

Trans. of Ekonomicheskay Gazeta (USSR) 1962, no. 28[49] p. 11, 33, 44.

DESCRIPTORS: *Metallurgy, Industrial research, *Steel, Molding, Rolling mills, *Management engineering, Economics, Iron, Ores, Mines, Tungsten alloys, Pipes, *Weld drilling, Open hearth furnaces

Contents:
The advantages of continuous steel pouring, by I. Ektov and others
Problems of the new administration structure at the metallurgical plant imeni Dzershinskii, by F. Yanovich
A new iron ore mine at Teya, by M. Rogov
Tungsten alloy steel for drill pipes

Antonov, A. N.
FUNDICION DE HIERRO DE GRAN PRECISION EN MOLDES SEMIPERMANENTES (Chugunnoe Lit'e Povyshennoi Tochnosti v Polupostoyannye Formy) (High Precision Cast Iron in Semipermanent Molds). 23p. CID: 62-11. (text in Spanish).
Order from OTS or ETC $1.55 62-26211

Trans. of Liteinoe Proizvodstvo (USSR) 1960, no. 7, p. 1-5.

DESCRIPTORS: *Iron castings, Molding.

Bokshtein, S. Z.
INFLUENCIA DE LOS ELEMENTOS DE ALEACION SOBRE LA DESCOMPOSICION DE LA MARTENSITA DURANTE EL REVENIDO DEL ACERO (Vliyanie Legiruyushchikh Elementov na Raspad Martensita pri Otpuske Stali) (Influence of Alloying Elements on Martensite Decomposition During Tempering of Steel). 10p. 10 refs. CID: 62-5. (text in Spanish).
Order from OTS or ETC $1.- 62-26205

Trans. of Akademiya Nauk SSSR. Doklady, 1950, v. 73, no. 3, p. 491-494.

DESCRIPTORS: Heat treatment, *Steel, Martensite, Decomposition, Alloys.

Gaev, I.
UNA ESPADA DE TOLEDO (Toledskii Klinok) (A Toledo Sword). 13p. 5 refs. CID: 62-77. (text in Spanish).
Order from OTS or ETC $1.10 62-26277

Trans. of Akademiya Nauk SSSR. Otdelenie Tekhnicheskikh Nauk. Izvestiya, 1954, no. 12, p. 97-101

DESCRIPTORS: *Bayonets, Steel.

Hofmann, W. and Vibrans, G.
CONTRIBUTION TOWARDS THE KNOWLEDGE OF THE BEHAVIOUR OF HYDROGEN IN STEEL. [1960] [7]p. 6 refs.
Order from SLA $1.10 62-16892

Trans. of Revue de Métallurgie. Mémoires Scientifiques (France) 1960, v. 57, no. 2, p. 88-90.
Another trans. is available from BISI £2 as BISI-1719 [1960].

DESCRIPTORS: *Steel, Mechanical properties, Hydrogen, Metallurgy

Paper presented to the Autumn Metallurgical Meetings of the Fr. Met. Soc., Paris, 23rd Oct. 1959.

Il'ina, V. A. and Kritskaya, V. K.
INVESTIGATION OF THE LAWS OF THE VARIATION OF THE INTENSITY OF X-RAY INTERFERENCE BY DEFORMED IRON. [1961] 6p. 12 refs. MDF I-106.
Order from OTS $0.50 62-11281

Trans. of Problemy Metallovedeniya i Fiziki Metallov (USSR) 1955, v. 4, p. 425-431.

DESCRIPTORS: Iron, Deformation, *X-ray diffraction analysis, *Crystal structure.

The intensity was measured of X-ray reflection from deformed and undeformed iron in molybdenum k_α-radiation. The investigation confirmed completely the existence of an $\exp[-A \Sigma h_i^2]$ law in the attenuation of the intensity of X-ray reflection from deformed metals and also verified the correctness of the concept that the reason for the attenuation of the intensity in deformed metals is the existence of the distortion of the third kind. The intensity of X-ray interference from deformed iron is weaker than from undeformed, where the attenuation of the intensity is the weaker, the higher the order of reflection, and it is subject to the $\exp[-A \Sigma h_i^2]$ law.

Koike, Yosaku, Muto, Yodo, and Okubo, Sozaburo.
HYDRODYNAMICS OF MOLTEN STEEL WHEN TEEMING, II. [1962] [5]p.
Order from SLA $1.10 62-14658

Trans. of Tetsu to Hagane (Japan) 1958, v. 44, no. 3, p. 260-262.
Another trans. is available from BISI £4 15s as BISI-1477 [1960].

DESCRIPTORS: *Steel, *Casting, Melting, Hydrodynamics, Nozzles, Erosion, Deformation, Refractory materials.

For abstract see Technical Translations 3: 453, 1960.

Martynchenko, I. U. and Bondarenko, A. M.
PHOTOMETRIC DETERMINATION OF BORON IN STEEL. June 60 [10]p. 19 refs. A. C. S. I. L. Trans. no. 1077; ACSIL/ADM/60/193.
Order from OTS or SLA $1.10 62-23522

Trans. of #Zhurnal Analiticheskoi Khimii (USSR) 1957, v. 12, no. 4, p. 495-498.
Another trans. is available from LC or SLA mi$2.40, ph$3.30 as 61-13114, CRL/T-108 [1960] 11p.

DESCRIPTORS: *Steel, *Boron, *Spectrographic analysis, Reagents, Carminic acid, Phosphoric acid.

For abstract see Technical Translations 5: 89, 1961.

Zil'bershtein, L.
ARSENICAL STEEL FOR OIL PIPELINES AND WELL CASINGS. [1962] 2p.
Order from OTS or SLA $1.10 62-14641

[Condensed] trans. of Novosti Tekhniki (USSR) 1941, v. 10, no. 2, p. 16-17.

DESCRIPTORS: Steel, *Arsenic, *Steel tubing, Pipes, Oils, Mechanical properties, Transportation.

Light Metals

Altenpohl, D.
DISCONTINUOUS SOLIDIFICATION PHENOMENA IN THE CONTINUOUS CASTING OF RAFFINAL ALUMINUM. [1962] 21p. (refs. figs. omitted).
Order from SLA $2.60 62-16913

Trans. of Zeitschrift für Metallkunde (West Germany) 1953 [v. 44] Nov, p. 536-550.

DESCRIPTORS: Casting, *Aluminum castings, Microanalysis, Microstructure.

Erdmann-Jesnitzer, F. and Jehmlich, G.
THE EFFECTS OF COOLING CONDITIONS UPON INVERSE SEGREGATION IN ALUMINIUM ALLOYS. [1962] [19]p. (13 figs. 15 refs. omitted).
Order from SLA $1.60 62-18103

Trans. of Aluminium (Germany) 1962, v. 38, no. 1, p. 13-19.

DESCRIPTORS: *Aluminum alloys, *Casting, Cooling, *Metallic crystals, Separation, Microstructure, *Radiography.

The investigational results published heretofore on the extraneous criteria affecting the order of magnitude (difference between concentrations at ingot periphery and the middle) alter them either to larger or smaller values, are presented. The effects of casting temperature, the thickness of the mould walls and the mould temperature at a constant pouring temperature upon cast-texture, concentration distribution and the extent of inverse segregation, were investigated microradiographically. It was found that for the occurrence of inverse segregation, it is essential that there be a temperature difference between the melt and the mould. (Author)

Nikiforov, G. D. and Makhortova, A. G.
THE SOURCES OF HYDROGEN DISSOLVED IN THE WELD METAL WHEN WELDING ALUMINIUM. [1962] 13p. (figs. omitted) 5 refs.
Order from OTS or SLA $1.60 62-16943

Trans. of #Svarochnoe Proizvodstvo (USSR) 1961, v. 7, no. 4, p. 6-10.

DESCRIPTORS: *Aluminum, *Welding, Hydrogen, Sources, Porosity, *Aluminum alloys, Elimination reactions, Liquids, Solutions.

The moisture adsorbed on the surfaces of wire and parent metal is by far the largest source of hydrogen. Since the specific surface of the wire participating in the formation of the weld is relatively large, special attention should be given to the condition of the surface and methods of pretreatment. The data given on the quantities of hydrogen liberated from the surfaces of wire and components on heating, after various methods of surface treatment, make it possible to select an appropriate method of surface treatment prior to welding. Future studies on the elimination of pores should be directed towards the selection of appropriate methods of surface treatment of wire and components prior to welding. They should also include the investigation of storage methods prior to welding and methods of converting hydrogen gas into compounds which are insoluble in metal and stable at high temperatures. (Author)

Nonferrous (except light) Metals

Kreimer, G. S., Safonova, O. S., and Baranov, A. I.
HARDNESS OF METAL–CERAMIC SOLID ALLOYS OF TUNGSTEN CARBIDE-COBALT DEPENDING ON TEMPERATURE AND GRAIN SIZE [Prochnost' Metallo-keramicheskogo Tverdogo Splava-Karbid Vol'frama-Kobal't v Zavisimosti ot Temperatury i Razmera Zeren]. [1961] 10p. 6 refs. MDF K-146.
Order from OTS $0.50 62-11218

Trans. of Zh[urnal] Tekh[nicheskoi] Fiz[iki] (USSR) 1955, v. 25, no. 1, p. 117-124.

DESCRIPTORS: Metals, *Ceramic materials, *Tungsten alloys, *Carbides, *Cobalt alloys, Hardness, Temperature, Grains (Metallurgy), Deformation.

At room temperature, very fine-grained solid alloys of tungsten carbide-cobalt have a lowered hardness because of the interlocking of very thin cobalt layers with the stiff grains of tungsten carbide and the retardation of the microshift in the cobalt grains related to it. The hardness maximum is observed within the experimental limits independently of the grain size, at 200°C which is related to the increase of microplasticity and the overdistribution of strain. At much higher temperatures, all the more apparent is the factor of grain-boundary displacement (diffusion of plasticity) which decreases the alloy hardness as the grain size decreases and the boundary surface increases. An explicit (macroscopic) plastic deformation is observed at 1000°C for the specimens with very fine grains. The aforementioned factors are superposed on the usual regular decrease in cobalt hardness as temperature increases. (Author)

Detert, K.
EXAMINATION OF BOUNDARY LAYERS IN LEAD-TIN ALLOYS. [1962] 4p. (refs. figs. tables omitted).
Order from SLA $1.10 62-16947

Trans. of Zeitschrift für Metallkunde (West Germany) 1954 [v. 45, no. 9] p. 547-550.

DESCRIPTORS: *Lead alloys, *Tin alloys, Alloys, Boundary layer.

Rhodes, Edwin.
MELTING AND MOLDING OF PRECIOUS METALS AND THEIR ALLOYS: VACUUM MELTING AND LOST-WAX MELTING (PLATINUM AND PALLADIUM). [1962] 3p. (refs. omitted).
Available on loan from SLA 62-18606

Partial trans. (p. 1275-1277) of Fonderie (France) 1948 [no. 32] p. 1271-1282.

DESCRIPTORS: *Transition elements, Melting, Molding, *Platinum, *Platinum alloys, *Palladium, *Palladium alloys, Crucibles, Vacuum systems.

Structural Metallurgy and Corrosion

Biel, H.
METAL SPRAYING AS A MEANS OF PROTECTION AGAINST CORROSION. [1962] 7p. ([refs.] figs. tables omitted).
Order from SLA $1.10 62-16931

Trans. of Werkstoffe und Korrosion (West Germany) 1951, v. 2, no. 5, p. 182-185.

DESCRIPTORS: *Corrosion, *Corrosion inhibition, *Metal coatings, *Flame spraying.

Britton, S. C.
HOW TO INCREASE THE STRENGTH OF OXIDE FILMS ON TIN TO IMPROVE ITS RESISTANCE TO CORROSION. [1962] 7p. [refs. omitted].
Order from SLA $1.10 62-16791

Trans. of Metaux (Corrosion-Industries) (France) 1955, v. 30, no. 355, p. 134-138.

DESCRIPTORS: *Tin, Films, Oxides, *Corrosion inhibition, Coatings, Citric acids, *Oxidation inhibitors.

Chaudron, G.
VARIOUS TYPES OF HYDROGEN FIXATION IN METALS (ROLES OF THE MOSAIC STRUCTURE OF METAL). [1962] 4p.
Order from SLA $1.10 62-16941

Trans. of [Métaux (Corrosion-Industrie)] (France) 1944 [v. 20] Sep/Oct, p. 92-93.

DESCRIPTORS: *Metals, Crystal structure, Crystals, *Hydrogen, Penetration, Adsorption, Diffusion, Mechanical properties, Elasticity

Erbacher, O., Herr, W. and others.
ON A NEW METHOD OF CORROSION-PROTECTION OF METALS IN ELECTROLYTES BY A MONATOMIC FILM WITH A MORE NOBLE METAL. [1962] 9p. (2 tables 1 fig. 14 refs. omitted).
Order from SLA $1.10 62-18163

Trans. of Archiv für Metallkunde (Germany) 1949, v. 3, Dec, p. 409-413.

DESCRIPTORS: *Electrochemistry, *Corrosion inhibition, *Cathodic protection, Electrolytes, *Thin films, Metal films, Nickel, Bismuth, Zinc, Copper, Iron.

Movchan, B. A.
CONCENTRATION LAYERS ON INTERPHASIAL SURFACES DURING CRYSTALLIZATION OF ALLOYS. [1960] 9p. 8 refs. MDF M-140.
Order from OTS $0.50 62-11439

Trans. of A[kademiya] N[auk] SSSR. O[tdelenie] T[ekhnicheskikh] N[auk]. Izvestiya: Met[allurgiya] i Topl[ivo] 1960, no. 2, p. 72-78.

DESCRIPTORS: Copper alloys, Zinc alloys, *Alloys, Aluminum alloys, Tin alloys, *Phase transitions, Surfaces, *Crystallization, Microstructure, Lead alloys, Bismuth alloys, Silver alloys.

Methods of qualitative and quantitative micro-R-ray analysis were used in studying the impurities distribution between phases. The alloys Al-Cu, Al-Zn, Al-Sn, Cu-Sn, Zn-Sn were investigated in a wide range of concentrations and certain Sn-Pb, Sn-Bi and Al-Ag alloys were investigated. The alloys were prepared from pure (99.99%) components by vacuum melting or in an argon atmosphere. Results demonstrate the peculiarities of the component distribution between phases during alloy crystallization which are related to concentration changes on the interphasial surfaces.

NUCLEAR PHYSICS AND NUCLEAR CHEMISTRY

Himmelstein, Paul and Liebmann, Bernhard.
PREPARATION OF URANIUM AND MIXED CARBIDES AND OF UC-CERMETS, IMPROVED RESISTANCE TO CORROSION AND INVESTIGATION OF THE PROPERTIES. Quarterly rept. no. 2 on Contract 012-60-5-RDA. [1962] 11p. Supersedes TID-12443.
Order from OTS or SLA $1.10 EURAEC-69

Trans. of rept. from Nuklear-Chemie und -Metallurgie G. m. b. H., Wolfgang bei Hanau a. M. (West Germany) 30 Nov 60.

DESCRIPTORS: *Uranium compounds, *Carbides, *Cermets, Corrosion inhibition, Production, Machining.

See also 62-32167

Himmelstein, P[aul], Hofmann, F[riedrich] and others.
[PREPARATION] OF URANIUM AND MIXED CARBIDES AND UC-BASED CERMETS, CORROSION PROCESSING AND PROPERTY TESTS. Quarterly rept. no. 4, Apr-June 61. [1962] 8p.
Order from OTS or SLA $1.10 EURAEC-124

Trans. of rept. from Nuklear-Chemie und -Metallurgie G. m. b. H., Wolfgang bei Hanau a. M. (West Germany) 31 July 61.

DESCRIPTORS: *Uranium compounds, *Carbides, *Graphite, *Cermets, Corrosion inhibition, Production, Pellets, Melting, Electrodes, Machining, Solid state physics.

The tests for the fabrication of uranium carbide from uranium oxide and graphite were continued. The construction of a semi-continuous furnace to test the reaction on a larger scale was completed. With UC pellets fabricated at 1550° C, the weight increase over a period of eight weeks amounted to 0.05 % at room temperature in air with approx. 60 % humidity, whilst it increased to 1.2 % in air saturated with water vapour. The first melting test was carried out in the completed skull-melting furnace. For grinding the uranium carbide solidified from the melt a jaw-breaker operating under protective gas was constructed and commissioned. The grain sizes of the ground product correspond to a large extent to the distribution required for swaging and vibration compacting. (Author) (See also 62-32166)

Himmelstein, Paul and Liebmann, Bernhard.
[PREPARATION] OF URANIUM AND MIXED CARBIDES, AS ALSO OF CERMETS MANUFACTURED FROM URANIUM CARBIDE, INCREASE IN THE RESISTANCE TO CORROSION AND THE EXAMINATION OF THE PROPERTIES OF THESE PRODUCTS. Quarterly rept. no. 1, 1 May-30 July 60. [1962] 6p. Supersedes TID-12 441.
Order from OTS or SLA $1.60 EURAEC-20

Trans. of rept. from Nuklear-Chemie und -Metallurgie G. m. b. H., Wolfgang bei Hanau a. M. (West Germany) 29 Aug 60.

DESCRIPTORS: *Uranium compounds, *Carbides, *Cermets, Corrosion inhibition, Production, Reduction, Electric furnaces, Powders.

Ichikawa, Michio and Taketani, Kiyoaki.
STUDY ON THE THERMAL CYCLING EFFECT OF URANIUM BY X-RAY INVERSE POLE FIGURE METHOD (I). Studies on Uranium Fuel Element no. 7. July 62, 9p. 4 refs.
Order from OTS $0.50 AEC-tr-5076

Trans. of Nihon Genshiryoku Gakkaishi (Japan) 1960, v. 2 [no. 7] p. 406-411.

DESCRIPTORS: *Uranium, *Fuel rods, X-ray diffraction analysis, Crystallization, Microstructure.

Changes in texture were studied by subjecting 300°C-rolled, 10-mm-diam metallic uranium rods to thermal cycling between 550°C and room temperature. The inverse pole figure method (Nihon Genshiryoku Gakkaishi 2: 190-195, 1960; available in translation from OTS $0.50 as 61-31674) was used for expressing the structure. Changes in texture due to recrystallization (Nuclear Physics and Nuclear Chemistry, TT, v. 8, were also studied. Specimens fresh from 300°C rolling have the congregation of plane poles around (041)~(010). The congregation point is dispersed and shifts during thermal cycling of about 300 times. Continuation of thermal cycling brings no change until about the 1,000th cycle, at which time the congregation point is (150)~(131)~(120). The 300°C-rolled specimens were also given recrystallizing treatment at 550°C. The congregation point, which was at (041)~(010) in specimens fresh from rolling was dispersed and shifted to around (150)~(131)~(120) in 5 hours or so as a result of annealing. After annealing for about 10 hours the congregation was around (152)~(131). Micrographs of specimens that were given 1,000 thermal cycles had equi-axed, fine crystal grains. (See also 61-31695, 62-11100)

Ishihari, Takehiko; Tsujino, Takeshi; and Yamamoto, Yutaka.
RADIATION DAMAGE TO TBP/KEROSENE SOLVENT EFFECT ON BEHAVIORS OF FISSION PRODUCTS AND NITRIC ACID. July 62, 16p. 19 refs.
Order from OTS $0.50 AEC-tr-5071

Trans. of Nihon Genshiryoku Gakkaishi (Japan) 1960, v. 2 [no. 11] p. 659-670.

DESCRIPTORS: Reactor fuels, Regeneration, *Organic solvents, *Phosphates, Butyl radicals, Kerosene, Radiation effects, *Nitric acid, Zirconium, Niobium, Ruthenium, Cerium, Iodine, Half life, Decontamination, Fission products.

A study was made of the 30 vol. % TBP/kerosene which is used extensively in Purex process, and research was conducted on its radiation damage in the following points: (1) changes in the distribution coefficients of zirconium, niobium, ruthenium, cerium, iodine, and gross fission products (M. F. P.), from the view-points of half-lives and decontamination efficiency, (2) stripping from the organic phases of these F. P., (3) distribution of nitric acid, (4) formation of emulsion, and (5) phase separation.

Lutz, Heinrich.
THE DECAY OF Gd^{153}. [1962] [26]p. 26 refs.
Order from SLA $2.60 62-18072

Trans. of Zeitschrift für Physik (West Germany) 1960, v. 159, p. 462-477.

DESCRIPTORS: *Gadolinium, *Europium, *Radioactive decay, Radioactive isotopes, *Electron capture, Crystals, Scintillation counters.

The electron capture decay of Gd^{153} was studied by mounting the radioactive source in three different ways: Outside or in the center or built into the lattice of an NaI(Tl)-crystal. The $\frac{P_{L+1}}{P_K}\frac{M+1}{\cdots}$ capture ratio was measured for disintegration into the 97.5 and 103 Kev level, respectively, and into the 172.5 level of Eu^{153}: 0.34 ± 0.02 and 0.85 ± 0.3. These results were used to determine the disintegration energy of Gd^{153}: 279.5 ± 8 dev and 269^{+26}_{-16} keV. Moreover, branching ratios, log ft-values and conversion coefficients were determined. (Author)

Pasechnik, I. P.
SCIENCE HAS DEMONSTRATED: NUCLEAR EXPLOSIONS CAN BE DETECTED WHEREVER THEY OCCUR. 31 Aug 62 [20]p. JPRS: 15086.
Order from OTS or SLA $1.60 62-32873

Trans. of Priroda (USSR) 1962 [v. 51] no. 7, p. 3-12.

DESCRIPTORS: *Nuclear explosions, Detection, Nuclear weapons

Puzikov, L. D. and Smorodinskii, Ya. A.
CORRELATION OF THE PLANES OF DISINTEGRATION OF A V^0-PAIR AND THE SPIN OF A e^0-MESON [Korrelyatsiya Ploskostei Raspada V^0-Par i Spin e^0 Mezona]. [1961] 6p. 5 refs. ; DF P-125.
Order from OTS $0.50 62-11406

Trans. of A[kademiya] N[auk] SSSR. Doklady, 1955, v. 104, no. 6, p. 843-845.
Another trans. is available from SLA as RT-3492.

DESCRIPTORS: Particles, *Mesons, *Hyperons, *V Particles, *Nuclear spins, Nuclear reactions, Radioactive decay, Correlation techniques, Probability

An analysis shows that correlation requires (1) a Λ^0 spin larger than 7/2, (2) a non-zero e^0 spin, and (3) a e^0 spin considerably less than the Λ^0 spin.

Instruments and Installations

SOLID STATE DETECTOR FOR NEUTRONS. Quarterly rept. no. 2 (Jan-Mar 61). Mar 61, 28p. 6 refs.
Order from OTS or SLA $2.60 EURAEC-107

Trans. of rept. from Centre d'Étude de l'Énergie Nucléaire Brussels (Belgium).

DESCRIPTORS: *Neutron detectors, Detectors, Silicon compounds, Carbides, Diodes, Radiation damage, Resistance, Hall effect, Photoelectric effects, Temperature, Neutron counters.

Contents:
Introduction
Radiation damage studies of grown SiC diodes
Resistivity and hall measurements
The barrier counter
Progress.

SOLID STATE NEUTRON DETECTOR. Quarterly rept. no. 4 (July-Sep 61). Sep 61, 13p.
Order from OTS or SLA $1.60 EURAEC-185

Trans. of rept. from Centre d'Étude de l'Énergie Nucléaire Brussels (Belgium).

DESCRIPTORS: *Neutron detectors, Detectors, Photoelectric effects, Resistance, Hall effect, Silicon compounds, Carbides, Single crystals, Radiation damage.

Nuclear Engineering and Power

MACHINE BUILDING AND INSTRUMENT BUILDING (Mashinostroenie i Priborostroenie). Oct 61, 405p. 225 refs.
Order from OTS $5.00 AEC-tr-4492

Trans. of mono. Trudy Vsesoyuznoi Nauchno-Tekhnicheskoi Konferentsii po Primeneniyu Radioaktivnykh i Stabil'nykh Izotopov i Izluchenii v Narodnom Khozyaistve i Nauke (All-Union Scientific-Technical Conference on the Use of Radioactive and Stable Isotopes and Radiations in the National Economy and Science) 4-12 Apr 57, Moscow, 1958.

DESCRIPTORS: *Machines, Construction, Instrumentation, *Radioactive isotopes, Steel, Cast iron, Sulfides, *Friction, *Oils, *Diesel engines, Tractors, *Lubricant additives, *Corrosion inhibition, Coal, Airplane engines, *Piston rings, *Radioactivity, *Cutting tools, Cleaning fluids, *Radiation instruments, Castings, *Radiation counters, *Thermal neutrons, *Radiographic analysis, Well logging, *Gamma rays, Inland waterways, Milk, Leather, Fur, Textile industry, Pipes, *Beta particles, Recording devices, Powders, Electronic circuits, Relays, Magnetic core switches, Fluid flow, Phosphorus, Gas flow, Gas ionization, Static electricity, Silk, Communication equipment, Electric cables, Gas leaks, Betatrons, Welded joints *Thulium, Non-destructive testing, *Cobalt, Welding, Ship hulls, *Iridium,

Contents:
The application of radio isotopes in machine building, by V. I. Dikushin
The structure and durability of case-hardened steel, by L. S. Palatnik and others
A study of the deterioration of high-strength cast iron, by V. I. Stetsenko and E. A. Markovskii
A study of the behavior of a sulfided layer in the process of deterioration, by V. E. Vainshtein and Yu. M. Vinogradov.
A study of the transfer of metals during friction and deterioration, by G. M. Zamoruyev and Ya. N. Levin
The problem of the transfer of metals and materials present on their surfaces, by G. V. Vinogradov
A study of deterioration during rolling friction, by V. P. Pavlov and others
Study of the effect of the quality of oil upon the deterioration of cast iron, by V. S. Zavel'skii and K. S. Ramaiya
The relationship between the deterioration of diesel engine's upper piston ring and cylinder bush and the engine speed and the maximum pressure of the cycle, by M. D. Nikitin
A study of the effect of dust upon the deterioration of the parts of a tractor motor, by A. I. Nisnevich
The reduction of the low-temperature deterioration of the cylinder-piston group engines with the use of oil additives, by Yu. S. Zaslavskii and others
A study of the mechanism of the action of anticorrosive additives to oils, by Yu. S. Zaslavskii and others
A study of the mechanism of the reaction of oil additives with metals, by M. M. Kusakov and others
A study of the deterioration of cog-wheels in coal mining machines, by E. Ya. Studnits
A study of the deterioration of members of feed units in airplane engines, by A. I. Yudin
An automobile road laboratory for studying the effect of the dust content of air and the quality of the air purifier on the deterioration of the engine's piston rings, by D. I. Vysotskii and others
An apparatus for studying the formation of films on friction surfaces, by M. Melik-Zade
A scintillation apparatus for measuring the radioactivity of fluids, by O. E. Kalinovskii
A study of the metal cutting process, by N. F. Kazakov
Study of the deterioration of hard alloy cutting tools, by B. D. Lazebnik
Study of the deterioration of cutting tools, by G. M. Yakovlev
A method of evaluating the cleanness of degreased metals, by R. B. Chernyakova
A study of the process of shaping castings in sand molds, by B. B. Gulyaev and others
A study of the mechanism of the basic processes of hot tinplating, by A. I. Vitkin
The utilization of nuclear radiation for the measurement of thermal power parameters, by G. G. Iordan and K. S. Furman
Reduction of errors during measurements with scintillation counters, by B. I. Verkhovskii
Methods of analysis with the aid of radiation, by V. A. Korotkova
Automation of the measurement and recording of the intensity of atomic radiation, by V. N. Afanas'ev
A study of the electrical properties of ionization resistors, by V. G. Telichkin

The use of radioactive isotopes for the automation of mining and sinking machines, by V. G. Segalin and A. A. Rudanovskii

Measurement of fluid density with the aid of gamma radiation, by G. G. Iordan and K. S. Furman

A new type of radioactive densimeter, by G. I. Birger and others

Industrial apparatus for the control of density by means of gamma rays, by E. G. Kardash

Calculation and study of the density of iron ore pulp on the basis of gamma-ray absorption, by A. K. Val'ter and M. L. Gol'din

Problems of gamma-ray pulp-measuring devices in dredging apparatus, by G. B. Vishnyak

Experience in utilizing of a gamma-ray densimeter developed by the Leningrad Physical Technical Institute, Academy of Sciences USSR, by E. M. Lobanov

The application of radiation in inland water transportation, by S. N. Dedyukov

The use of radiation for the automatic control and regulation of technological processes in the production of diary products, by A. Ya. Vainberg

The application of radioactive isotopes in the leather industry, by S. M. Smirnov

A radiometric method of determining the density of the hair covering of fur felts, by V. A. Pchelin and T. A. Shmeleva

The use of radioactive isotopes in the textile industry, by S. S. Shvyrev and others

The use of radioactive isotopes for controlling the weight of paper sheets, by E. A. Nekhayevskii

A scintillation thickness gauge for pipes, by E. G. Kardash

Measurement of the concentration of solutions by means of beta radiation, by G. G. Iordan and T. G. Neiman

The utilization of the backscattering of beta radiation for the control of the thickness of coatings, by B. I. Ermolaev

An apparatus for measuring the thickness of coatings, by N. V. Yur'ev

Experience of introducing apparatuses for measuring the thickness of rolled iron and coatings, by L. N. Baskin and others

The utilization of thickness gauges at the "Zaporozhstal'" plant, by N. S. Novoshenya

A calculation of the statistics of the control signal in the recording of radioactive radiation by relay type apparatuses, by I. M. Taksar and V. A. Yanushkovskii

Several problems concerning the design of gamma level gauges, by V. K. Latyshev and others

The use of scintillation counters with electronic modulation for recording gamma radiation, by E. Ya. Ovcharenko

Portable radioactive level indicators, by K. K. Shpor and V. A. Yanushkovskii

A device for measuring the level of powdered material, by E. A. Brik

Radioactive relay devices for automation and control, by Y. A. Auzan and others

A gamma relay in transistors, by V. G. Segalin

An evaluation of the load minimally necessary for counters in a gamma-relay, by K. S. Klempner

The utilization of radioactive isotopes for the automatic control of the rate of flow of fluids, by N. N. Shumilovskii and others

The use of short lived isotopes for controlling the technology of the production of steel tape, by V. V. Kryzhanovskii and others

The use of radioactive radiation for the noncontact control of a gas stream's rate of flow and velocity, by N. N. Shumilovskii and L. V. Mel'ttser

The use of alpha-emitters for measuring gas density, by Ya. Yu. Rebo and D. N. Ziv

An apparatus for the automatic control of a gas's rate of flow utilizing beta radiation, by G. G. Iordan and others

The utilization of radioactive isotopes for removing charges of static electricity in the silk industry, by P. A. Polonik and others

Some problems of the preparation of beta emitters for the removal of an electrostatic charge, by A. N. Vedernikov

The utilization of radioactive isotopes in safety techniques, by V. S. Medvedeva and I. S. Roizen

On the production of plates for the neutralization of charges, by I. S. Roizen

The determination of the site of leakage in the lead sheathing of a communication cable, by T. V. Abramova

Determination of the site of gas leakage from underground gas mains, by V. I. Kuznetsov

The ionization method of gammascopy, by L. K. Tatachenko

The use of scintillation counters in betatron flow detection, by I. G. Fakidov and others

The use of a scintillation counter for the quality control of manufactured articles, by A. A. Arkhangelskii and G. D. Latyshev

Control of welded seams by the irradiation method in ferrous metallurgy, by L. K. Tatochenko

The radiography of the butt welds of pipes, by S. T. Nazarov

Gammascopy of thin-walled parts by means of the utilization of the isotope Tu^{170}, by S. V. Rumyantsev

Gammascopy of steel articles possessing great thickness, by I. G. Fakidov and A. E. Buzynov

Features of the gamma control and irradiation technique of complex welded joints, by K. M. Grigoryev and I. G. Fakidov

Study of the blurring of the images of defects during the irradiation of steel with the gamma rays of the isotope Co^{60}, by N. P. Grazhdankina and I. G. Fakidov

The use of soft radiation isotopes for the control of welding in shipbuilding, by O. N. Zhukov

Experience of the application of the isotope Ir^{192} at the Riga ship repair plant, by V. O. Birshtein

WET PREPARATION OF UO_2 POWDERS. Quarterly rept. no. 2 (Apr-June 61) on Contract [EURATOM] 028-60-10-RDI. 30 June 61, 42p. Order from OTS or SLA $4.60 EURAEC-112

Trans. of rept. from Comitato Nazionale per l'Energia Nucleare, Rome (Italy).

DESCRIPTORS: *Uranium compounds, *Dioxides, Hydroxides, Powders, Preparation, Moisture, Precipitation, Hydrogen ion concentration, Powder metallurgy, Sintering.

Adorni, N., Casagrande, I. and others.
EXPERIMENTAL DATA ON TWO-PHASE ADIABATIC FLOW: LIQUID FILM THICKNESS, PHASE AND VELOCITY DISTRIBUTION, PRESSURE DROPS IN VERTICAL GAS-LIQUID FLOW. Special rept. no. 7. Mar 61 [143]p. 52 refs. CISE Rept. R 35.
Order from OTS or SLA $11.00 EURAEC-150

Trans. of rept. from Centro Informazioni Studi Esperienze (Italy).

DESCRIPTORS: Experimental data, *Adiabatic gas flow, Gas flow, Liquids, Films, Thickness, Phase studies, Velocity, Distribution, Pressure, Reduction, Reactor coolants, Power reactors.

All the data obtained on film thickness, phase and velocity distribution and pressure drops in a cylindrical test section are reported.

Filipczak, Veslav.
NUCLEAR REACTOR START UP SIMULATOR. 25 Jan 62 [19]p. JPRS: 12161.
Order from OTS or SLA $1.60 62-19582

Trans. of Nukleonika (Poland) 1961, v. 6, no. 6, p. 387-397.

DESCRIPTORS: *Reactor start-up sources, *Reactor kinetics, Neutron flux density, *Simulation, *Analog computers, Scheduling.

The present work describes a specialized computer of continuous operation (a reactor simulator) with an automatic variation of scale coefficients (built in the Laboratory of Reactor Automation of the Institute for Nuclear Research). It makes possible the modeling of nuclear reactor kinetics over a wide range (ten decades) of variation in the flow of neutrons. (Author)

Hofmann, Friedrich and Liebmann, Bernhard.
HOT SWAGING OF URANIUM OXIDE FUEL ELEMENTS. Quarterly rept. no. 2, 1 Aug-31 Oct 60, on Contract 011-60-5-RDA. [1962] 10p. Supersedes TID-12445.
Order from OTS or SLA $1.10 EURAEC-9

Trans. of rept. from Nuklear-Chemie und -Metallurgie G. m. b. H., Wolfgang bei Hanau a. M. (West Germany) [1961].

DESCRIPTORS: *Fuel elements, Uranium compounds, Oxides, Powders, Production, Tests, Temperature

In the period under review, swaging experiments were made with the new powders, various intermediate annealings were tried, the reduction of the swaging density was investigated, hot-swaging experiments were started and further experiments with swaging heads of various shapes were prepared. (Author) (See also 62-32165)

Hofmann, F[riedrich] and Liebmann, B[ernhard].
HOT SWAGING OF URANIUM OXIDE FUEL ELEMENTS. Quarterly rept. no. 3, Jan-Mar 61, on Contract EUR/V/2027/61 e. [1962] 15p.
Order from OTS or SLA $1.60 EURAEC-60

Trans. of rept. from Nuklear-Chemie und -Metallurgie G. m. b. H., Wolfgang bei Hanau a. M. (West Germany) 17 May 61.

DESCRIPTORS: *Fuel elements, Uranium compounds, Oxides, Powders, Production, Tests, Temperature

Activities consisted mainly in hot-swaging tests in the 450 to 900°C temperature range. The swaging densities thus achieved were, according to the UO_2 powder used, from 4 to 7% above those obtained under comparable conditions by cold swaging. Powder prepared by melting and grinding was successfully compacted to 94% t. d. by a 53% cross-sectional reduction at 800°C, while powder fabricated chemically was compacted to 87. 5% t. d. by a 65% reduction at 600°C. The interdependence between the pore structure of swaged UO_2 and the type of powder, swaging temperature and cross-sectional reduction was examined by means of a mercury porosimeter. (Author) (See also 62-32022)

Hofmann, Friedrich and Liebmann, Bernhard.
THE PRODUCTION OF SWAGED OXIDE FUEL ELEMENTS. Quarterly rept. no. 1, 1 May-30 July 60, on Contract 011-60-5-RDA. [1962] 8p. Supersedes TID-12 444.
Order from OTS or SLA $1.10 EURAEC-8

Trans. of rept. from Nuklear-Chemie und - Metallurgie G. m. b. H., Wolfgang bei Hanau a. M. (West Germany) 29 Aug 61.

DESCRIPTORS: *Fuel elements, Aluminum compounds, Uranium compounds, Oxides, Powders, Production, Tests

During the swaging tests with melted and ground UO_2, the powder was compressed to 95% of its theoretical density. (Author)

Nishihara, Hiroshi and Nishihari, Hideaki.
INVESTIGATION ON STABILITY OF A BOILING HEAVY-WATER REACTOR. July 62, 15p. 10 refs.
Order from OTS $0.50 AEC-tr-5078

Trans. of Nihon Genshiryoku Gakkaishi (Japan) 1960, v. 2 [no. 8] p. 451-459.

DESCRIPTORS: *Boiling water reactors, *Heavy water reactors, Operation, Stability, Reactor reactivity, Cooling, Uranium compounds, Dioxides, Fuel elements, Control.

The conclusion is reached that a reactor analogous to the Halden heavy-water boiling reactor of Norway can be operated with sufficient stability when it is loaded with UO_2 fuel. When the reactor is loaded with metallic U fuel, marginal stable power under the worst operational condition. in which there is no subcooling at all, is 30 MW. In this case, however, stability can be effected by increasing sub-cooling, and the reactor can be operated with stability at high output as in the case of UO_2 fuel loading. Since the critical volume of the boiling heavy water reactor is generally larger than that of the light water reactor, it has larger time constants such as T_r and τ and its gain in the high frequency range is small. Therefore, if void reactivity coefficient is assumed as equal, this

reactor is more stable than the light water reactor. These time constants have differences of three times or so, while there are more than ten times differences between the time constants of fuel heat transfer between fuel elements of different kinds. Use of UO_2 as the fuel is highly effective in increasing the stability of the reactor. (Author)

Petunin, B. V.
THERMAL POWER ENGINEERING FOR NUCLEAR INSTALLATIONS. 6 June 62 [306]p. 59 refs.
FTD-TT-61-241.
Order from OTS or SLA $19.75 62-32523

Unedited rough draft trans. of mono. Teploenergetika Yadernykh Ustanovok, Moscow, 1960, 231p.

DESCRIPTORS: *Nuclear power plants, *Reactors, *Reactor fuels, Reactor control, Reactor moderators, Reactor shielding materials, Reactor reflector materials, Reactor safety systems, Classification, Design, *Heat exchangers, Coolants, Heavy water, Liquid metals, Gases, *Boiling water reactors, *Pressurized water reactors, Economics, *Gas turbines, Airplane engines, Marine engines.

Contents:
Elementary information on reactors
Heat carriers
Thermal power systems for nuclear plants with steam water cycles
Thermal power systems for nuclear installations with gas-turbine cycles
Heat exchange equipment

Schmets, J.
THE REPROCESSING OF IRRADIATED FUELS.
Quarterly rept. no. 1 (Second Quarter, 1960).
28 July 60, 96p.
Order from OTS or SLA $8.60 EURAEC-23

Trans. of rept. from Centre d'Étude del'Énergie Nucléaire, Brussels (Belgium).

DESCRIPTORS: *Reactor fuels, Processing, Chlorination, Uranium compounds, Carbides, Oxidation, Reduction, Reaction kinetics, Physical properties, Fission products, Powders, Powder metallurgy, Fluorides, Plutonium, Fluorination.

Contents:
Chlorination
Kinetics, physical properties
Elimination of fission products
Technology of the powders
Technology of uranium hexafluoride
Plutonium.

PHYSICS

PHYSICS, GEOPHYSICS, ASTROPHYSICS, ASTRONAUTICS, ASTRONOMY, AND MATHEMATICS, NO. 19. Series 1 of English Abstracts of Selected Articles from Soviet Bloc and Mainland China Technical Journals. Aug 62, 60p.
Order from OTS $25.00/year 61-11140-19
foreign $32.00/year

DESCRIPTORS: *Physics, *Astrophysics, *Astronautics, *Mathematics, *Astronomy, *Geophysics, *Abstracts, China.

Consists of abstracts in English.

Claus, B.
THE GYRO-TYPE BALL MILL. [1962] 4p. (figs. omitted) 2 refs.
Order from SLA $1.10 62-16582

Trans. of Zeitschrift für Angewandte Physik (West Germany) 1955 [v. 7, no. 12] p. 557-559.

DESCRIPTORS: *Ball mills, Centrifugal fields, Gravity, *Gyro stabilizers.

A new mill has been designed and built in which Coriolis forces act during operation in addition to gravity and centrifugal forces. Practical tests with the mill gave a considerably higher milling speed, greater degree of fineness and a greater uniformity of the material treated than could be obtained with the ordinary ball mills. The good results were attributed to the characteristic momenta of the balls and to their high impact values. (Author)

Finogenov, P. A.
THERMOSTATING WITH AN ACCURACY OF $\pm 0.0005^{\circ}$ C REALIZED BY SIMPLE MEANS. [1962] [3]p. (4 figs. omitted).
Order from OTS or SLA $1.10 62-18165

Trans. of [Zhurnal Tekhnicheskoi Fiziki (USSR) 1950] v. 20, no. 4, p. 480-482.

DESCRIPTORS: *Thermostats, Thermometers, Mercury, Toluenes.

Fomenko, L. A.
ON THE INFLUENCE OF THE DIMENSIONS OF A NICKEL-ZINC FERRITE CORE SAMPLE ON ITS MAGNETIC SPECTRUM. [1961] 3p. 4 refs.
MDF F-116.
Order from OTS $0.50 62-11559

Trans. of Zh[urnal] Eksp[erimental'noi i] Teor[eticheskoi] Fiz[iki] (USSR) 1953, v. 24, no. 3, p. 365-366.

DESCRIPTORS: *Ferrite cores, Nickel, Zinc, *Magnetic properties, Spectrographic analysis.

Measurements were made on five toroid cores with outer diameters of from 7 to 66 mm. The results showed that the size factor of the sample is not dominant in estimating the character of the frequency dependence of the permeability of Ni-Zn ferrites: the shape of the magnetic spectrum is determined basically by the high-frequency magnetic viscosity of the Ni-Zn ferrite substance itself.

Khitrin, L. N.
TO THE QUESTION OF FLAMELESS GAS COMBUSTION. [1961] 6p. 15 refs. MDF K-161.
Order from OTS $0.50 62-11219

Trans. of A[kademiya] N[auk] SSSR. Doklady, 1951, v. 76, no. 3, p. 475-478.

DESCRIPTORS: *Gases, *Combustion, *Refractory materials, *Gas burners, Jets.

Appraising the combustion process in a fine-grained charge, it can be stated, consequently, that combustion in this case, in contrast to combustion in a tunnel, can proceed basically as a surface combustion process, i.e., as a basically flameless process in the exact meaning of this word. (Author)

Acoustics

Hiramatsu, Keiji.
A NEW PITCH EXTRACTOR. [1962] 6p.
Order from SLA $1.10 62-18084

Trans. of [Nihon Onkyo Gakkaishi] (Japan) 1960, v. 16, no. 4, p. 279-281.

DESCRIPTORS: *Acoustic detectors, *Pitch discrimination, Noise analyzers, *Auditory signals, Sound, Frequency shift.

A new principle is described which permits not only extraction of pitch frequency, but extraction of formant or new parameter of speech information. This is achieved by discriminating the zerocrossing of frequency shifted signal. By infinitely increasing the amplitude and then clipping, it is possible with the present method to detect pitch signals which begin to appear in low-energy transients and to suppress noise with the residual carrier waves. In the detection of pitch frequency as well as in the process of changing pitch frequency variations into dc variations, phase discrimination or frequency discrimination becomes the most important function since the time delay is essentially minimized. Except for the integral method, which employs a direct extraction from low-frequency component, it is not especially necessary to use a low-frequency band of less than 300 cps. (See also 62-18083)

Khalevin, N. I.
ON THE INTERVAL LOGGING OF ACOUSTIC WAVES (K Interval'-nomu Karottazhu Akusticheskikh Voln). [1962] [7]p. (foreign text included) 5 refs.
Order from OTS or SLA $1.10 62-16430

Trans. of Akademiya Nauk SSSR. Doklady, 1957, v. 115, no. 1, p. 88-90.

DESCRIPTORS: *Seismic waves, Wave transmission, Ultrasonics, Rock, Porosity, *Well logging, *Geophysical prospecting, Mining engineering, *Detonation waves, *Acoustics, Sound, Geology.

In interrelation to the seismo-geologic conditions of the pit the intensity and character of the registrations of elastic waves change sharply. Under different degree of reliability, there were established four types of waves which in analogy of their characteristics obtained under ultrasonic investigations in holes may hypothetically be referred to the transverse waves established during surface measurements of seismographic geophysical explorations, longitudinal waves on the drill liquor, impact waves (or Lemb waves), and SH waves. (Author)

Kobayashi, Ryuji.
ON A PITCH PERIOD INDICATOR COMBINED WITH ZERO-CROSSING INTERVAL INDICATION. [1962] 6p. 7 refs.
Order from SLA $1.10 62-18085

Trans. of [Nihon Onkyo Gakkaishi] (Japan) 1960, v. 16, no. 4, p. 286-288.

DESCRIPTORS: *Acoustic detectors, *Pitch discrimination, *Speech transmission, *Auditory signals, Wave characteristics, Sound.

In the ordinary pitch indicater it is impossible to find in the melodic curve the exact location corresponding to each spoken syllable. An Improvement in this respect is achieved by the new pitch indicator which combines pitch and zero-crossing interval indications. The relation between voiced and voiceless, and the transition of tone quality are indicated by this combination. In this system, the indications of both quantities are continuous and inertialess, and if undesired noises are sufficiently suppressed, very weak signals can be distinctly traced. This system may be regarded as a special type of visible speech which is the complement of the sound spectrograph to be applied therewith. (Author) (See also 62-18084)

Nagata, Kuniichi and Kato, Yasuo.
SOME RESULTS OF AN EXPERIMENTAL PITCH DETECTOR. [1962] 5p. 1 ref.
Order from SLA $1.10 62-18083

Trans. of [Nihon Onkyo Gakkaishi] (Japan) 1960, v. 16, no. 4, p. 277-279.

DESCRIPTORS: *Acoustic detectors, *Pitch discrimination, Noise analyzers, *Auditory signals, Sound, Wave characteristics.

An instrument has been developed as a part of a formantvocoder for smoothly detecting wide-range voice pitch frequencies. Speech signals from a conventional telephone are cross-modulated, low-passed, frequency-inverted, and frequency-analyzed. Analyzed signals are discriminated separately, and their DC output voltages are compared in a simple diode added in order to select the most significant voltage which indicates the pitch frequency. The voltage-versus-frequency characteristic is closely linear, and the response time is comparatively small. The temperature characteristic, however, is not satisfactorily good yet. (Author)

Arnaud, M. and Cahen, O.
STUDY OF MAGNETIC FOCUSING SYSTEMS. [1962] [23]p. 1 ref.
Order from SLA $2.60 62-14843

Trans. of C[ompagnie] F[rançaise] T[homson]-H[ouston]. Revue Technique: [Electronique] 1960, no. 32, p. 41-58.

DESCRIPTORS: *Magnetometers, *Electromagnetic lenses, *Focusing, *Magnetic fields, Inductance, Magnet coils, Amplifiers, Electromagnetic pumps.

Bader, F.
ON THE EVIDENCE FOR THE EXISTENCE OF ANTIFERROMAGNETISM. [1962] 2p. (refs. omitted).
Order from SLA $1.10 62-16921

Trans. of Z[eitschrift für] Naturforsch[ung] (West Germany) 1953, v. 8a [no. 8] p. 498-499.

DESCRIPTORS: *Antiferromagnetism, Ferromagnetism, Magnetism, Transition elements.

Borovik-Romanov, A. S., Karasin, V. R. and Kreines, N. M.
ANTIFERROMAGNETISMO DE LOS SULFATOS ANHIDROS DE Ni.., Fe.., Co.. Y Cu.. (Antiferromagnetizm Bezvodnykh Sulfatov Ni.., Fe.., Co.. i Cu..) (Antiferromagnetism of Ni.., Fe.., Co.. and Cu.. Anhydrous Sulphates). 21p. 18 refs.
CID: 62-10. (text in Spanish).
Order from OTS or ETC $1.50 62-26210

Trans. of Zhurnal Eksperimental'noi i Teoreticheskoi Fiziki (USSR) 1956, v. 31, no. 1, p. 18-24.

DESCRIPTORS: Sulfates, Iron compounds, Cobalt compounds, Copper compounds, Nickel compounds, *Antiferromagnetism.

Dekhtyar, I. Ya. and Madatova, E. G.
INTERACTION BETWEEN THE MAGNETIC (DOMAIN) AND DISLOCATION STRUCTURE IN FERROMAGNETS. [1962] 11p. 5 refs.
Order from OTS or SLA $1.60 62-10615

Trans. of Izv[estiya] V[ysshikh] U[chebnykh] Z[avedenii]. Fizika (USSR) 1961, no. 1, p. 63-70.

DESCRIPTORS: Ferromagnetism, *Magnetic materials, Metals, Dislocations, Crystal structure, Annealing, Temperature, Theory, *Coercimeters.

In conformance with modern theories of coercive force and under the assumption that dislocation-type defects in the crystalline structure are formed during high-temperature quenching in a metal, there is analyzed their interaction with the domain structure. A computation of the dependence of the coercive force on the time of low-temperature annealing is in good agreement with experimental results. A computation made under the assumption that defects having the shape of spherical inclusions are formed during high-temperature quenching is not confirmed by experiment. (Author)

Fischer, J.
PERMANENT MAGNETS: THEIR PROPERTIES, DIMENSIONS AND STRUCTURAL ELEMENTS. [1962] 15p. (1 table 10 figs. formulae omitted).
Order from SLA $1.60 62-18166

Trans. of Archiv für Electrotechnik (Germany) 1949, v. 39, no. 5, p. 327-340.

DESCRIPTORS: *Electronic equipment, *Magnets, Magnetic materials, Magnetic properties, Structures Circuits.

Loginov, G. M.
MAGNETIC SUSCEPTIBILITY OF VANADIUM SULFIDES AT ELEVATED TEMPERATURES. [1961] 6p. 6 refs. MDF L-139.
Order from OTS $0.50 62-11371

Trans. of #Zh[urnal] Neorgan[icheskoi] Khimii (USSR) 1961, v. 6, no. 2, p. 261-264.

DESCRIPTORS: *Magnetic susceptibility, *Vanadium compounds, *Sulfides, Ferromagnetism, Antiferromagnetism.

Measurements of the magnetic susceptibility of the sulfides $VS_{1.02}$ - $VS_{1.50}$ at 200 to 500°C, confirmed the presence of a two-phase region $VS_{1.22}$-$VS_{1.33}$. The Curie-Weiss law is observed for V_2S_3; $VS_{1.33}$ has a barely manifest antiferromagnetic Curie point and an antiferromagnetic interaction between V^{II} and V^{III} is characteristic for the $VS_{1.02}$ - $VS_{1.22}$ phase and this interaction indicates that the V^{III} atoms in the lattice of this phase are arranged with a certain degree of order in all compositions.

Rabl, Helmut.
FERRITE TRANSFLUXORS, CHARACTERISTICS AND APPLICATIONS (Ferrit-Transfluxoren, Kennlinien, Anwendungsbeispiele). [1962] [33]p. (foreign text included) 2 refs.
Order from SLA $3.60 62-16092

Trans. of Siemens-Zeitschrift (West Germany) 1960, v. 34, no. 7, p. 397-404.

DESCRIPTORS: Ferrites, *Ferrite cores, Memory devices, Switching circuits, Magnetic cores, Magnetic core switches.

Toropov, N. A., Rabkin, L. I. and others.
PHASE COMPOSITION AND SOME FERROMAGNETIC PROPERTIES OF MANGANESE-ZINC FERRITES. [1962] [20]p. 12 refs.
Order from OTS or SLA $1.60 62-16443

Trans. of #Zhurnal Prikladnoi Khimii (USSR) 1953, v. 26, no. 9, p. 982-990.
Other translations are available from SLA as RT-4197 and R-5043.

DESCRIPTORS: *Manganese, *Zinc, *Ferrites, *Ferromagnetism, Phase studies, Magnetic properties, Permeability, Synthesis, Oxidation.

In the system MnO-ZnO-Fe_2O_3 there is a zone of solid solutions, the contours of which are given for the sintering temperature 1250°C. Equimolar manganese and zinc ferrites form a continuous series of substitutional solid solutions (solid solutions of Type I). In the binary system MnO-Fe_2O_3 there is a continuous series of solid solutions of Type II, from 69.25 to 80.70 wt-% of Fe_2O_3, where the manganese ferrite and cubic γ-Fe_2O_3 are the constituents of the solid solutions. The oxidation stability of the solid solutions of MZ-ferrites during heat treatment in a nitrogen flow with 0.1 to 0.01% oxygen content confirms the stability of the spinel structure. The oxidation of the manganese oxide to hausmannite in the process of synthesis sharply reduces the permeability in some cases, while in other cases the reduction is much weaker. It may be assumed that a tetragonal β-modification of Mn_3O_4 is formed in the first case, while a cubic γ-modification of Mn_3O_4 is formed in the second case, forming a solid solution with mixed MZ-ferrites. In the MnO-Fe_2O_3 system the ferrite MSh-100 was synthesized, its tangent of the angle of magnetic losses being considerably lower than in other ferrites of the same permeability. (Author)

Verbitskaya, T. N.
NON-LINEAR PROPERTIES OF SEIGNETTE-ELECTRICS. [1962] [19]p. 14 refs. [USASIA] Trans. Log no. 1007.
Order from OTS or SLA $1.60 62-32646

Trans. of #Akademiya Nauk SSSR. Izvestiya. Seriya Fizicheskaya, 1956, v. 20, no. 2, p. 185-194.

DESCRIPTORS: *Electrets, Electrical properties, Dielectric properties, Permeability, Ceramic materials, Barium compounds, Titanates, Temperature.

Yakovlev, E. N.
FERROMAGNETIC RESONANCE IN A UNIAXIAL FERRITE WITH TWO SUBLATTICES. [1959] 6p. 4 refs. MDF I-121.
Order from OTS $0.50 62-11408

Trans. of #Fiz[ika] Met[allov] i Metallov[edenie] (USSR) 1959, v. 8, no. 2, p. 165-169.

DESCRIPTORS: *Ferrites, Ferromagnetism, Resonance, Magnetic moments, Magnetic fields, Ferromagnetic materials, Radiofrequency, Frequency.

Resonance frequencies are calculated for two orientations of the constant magnetic field: along the easy magnetization axis and perpendicular to this axis. (Author)

Benua, E. Yu.
EXACT METHOD OF INVESTIGATING PERIODIC MODES IN AN EXTERNAL PULSE-REGULATION SYSTEM. 9 July 62 [20]p. 4 refs. JPRS:14417.
Order from OTS or SLA $1.60 62-25713

Trans. of Sbornik Rabot po Voprosom Elektromekhaniki (USSR) 1961, no. 5, p. 84-94.

DESCRIPTORS: *Periodic variations, *Pulse modulation, Pulse transformers, Integral transforms, *Nonlinear systems, *Oscillators, *Complex variables, Electronic systems.

An extremal-regulation system with a pulsed element is analyzed. The normal operating mode of such a system is a mode in which oscillations occur about an extremum position. The conditions are derived for the existence of self-oscillating modes and the conditions for their stability, assuming that the disturbances acting on the system change sufficiently slowly and that their influence on the process can be neglected.

Franz, Walter.
ZENER'S EFFECT AND IMPACT IONIZATION. [1962] 20p. 15 refs.
Order from SLA $1.60 62-14446

Trans. of mono. Halbleiter und Phosphore, n.p., 1958, p. 317-328.

DESCRIPTORS: *Electrons, *Field emission, *Impact shock, *Ionization, Excitation, Probability, Crystals.

Zener's internal field emission formula is not capable of quantitative application because of the neglections in ist derivation. Part A of this report derives a quantitative formula for the three-dimensional crystal by evaluating Houston's theory by complex methods. Coulomb interaction between the conduction electron created and the valence hole left is taken into account. Part B of the report gives the theory of impact ionization of the valence band by a conduction electron. The conduction electron is assumed to be quasi free (energy varying parabolically with wave number). The energy needed for impact ionization is somewhat larger than the optical band gap. When this energy is surpassed the ionization rate increases with the second or third power of the surplus energy (power depending on band structure). (Author)

Molecular Physics and Spectroscopy

Avramenko, L. I. and Kolesnikov, R. V.
THE DETECTION OF HO_2 RADICALS BY THE METHOD OF ELECTRON PARAMAGNETIC RESONANCE. 2 Apr 62 [4]p. 2 refs. FTD-TT-62-97 SC-1160; ASTAR 2445.
Order from OTS or SLA $1.10 62-24352

Unedited rough draft trans. of Akademiya Nauk SSSR. Doklady, 1961, v. 140, no. 5, p. 1100-1101.

DESCRIPTORS: *Hydrogen compounds, *Oxygen compounds, Electrons, *Paramagnetic resonance, Spectrographic analysis.

The HO_2 radical was obtained by the reaction of hydrogen atoms with an O_2 molecule at room temperature under flow conditions with a total pressure of 60 mm Hg. The linear flow rate was 90 cm/sec. The hydrogen atoms were obtained in quiet discharge in H_2 in an ozonator tube. The rate of HO_2 formation depends on pressure, which attests to the fact that the reaction is trimolecular, i.e., it occurs within the vessel. The HO_2 radicals were frozen at 77°K in a thin tube cooled by liquid notrogen. The EPR spectrum was photographed on a 3-cm radiospectrometer, type IKhF-2, with double modulation of the magnetic field. The signal had a nonsymmetric shape. The g-factor of the HO_2 radical was practically the same as that of diphenylpicrylhydrazene. Heating of the vessel and subsequent cooling again to 77°K resulted in disappearance of the signal. In tests without the addition of oxygen (blanks), no signal was noted. In tests where a signal of the EPR of the HO_2 radical was detected, H_2O_2 was found after the tube was opened. In tests with blanks, where no signal was noted, there was no H_2O_2.

Lebedev, O. L., Khidekel, M. L., and Razuvaev, G. A.
ISOTOPIC ANALYSIS OF NITROGEN BY THE ELECTRON PARAMAGNETIC RESONANCE METHOD. 25 Jan 62 [6]p. 3 refs.
Order from OTS or SLA $1.10 62-14991

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1961, v. 140, [no. 6] p. 1327-1329.

DESCRIPTORS: Nitrogen, *Paramagnetic resonance, Spectrographic analysis, Magnetic fields, *Nitrogen compounds, Free radicals, Quantitative analysis, *Radioactive isotopes, Particles, Hyperfine structure, Electrons, *Mass spectroscopy.

The EPR spectra were studied in aqueous-alcoholic medium in air at room temperature on an EPA type direct magnification spectrometer with double modulation of the magnetic field and an operating frequency of about 9000 Megahertz. The spectra were recorded as first derivatives of the absorption line on an EPP-09 self-recorder. To 1 ml of an aqueous solution containing 0.2 mmoles NH_4NO_3 was added 0.02 ml of a 25% alcoholic solution of phorone, 0.4 ml 0.5N NaOH, and 0.5 ml C_2H_5OH. The mixture was heated at 100° for 15 minutes in a sealed ampoule. 0.2 to 1 ml Trilon B, 0.2 ml 30% H_2O_2, and 0.1 ml 1M sodium tungstate solution were then added to the contents. The mixture was heated at 50° for 15 minutes. About 0.01 ml of the radical solution obtained was used for taking spectra. A change by a factor of 10 in the concentration of ammonium salt in the synthesis of the radical does not affect the accuracy of the determination. The method proposed can be used to analyze nitrogen-containing compounds in amounts of 0.02 mg.

Yazykova, S. M.
ON THE THEORY OF THE METAL MODEL OF A MOLECULE. [1960] 5p. 10 refs. MDF I-126
Order from OTS $0.50 62-11437

Trans. of Izv[estiya] V[ysshikh] U[chebnykh] Z[avedenii]. Fizika (USSR) 1960, no. 1, p. 64-67.

DESCRIPTORS: Molecules, Electrons, *Electron transitions, *Butadienes.

Within the scope of the metal model of a molecule, there is introduced a nonlocal potential which reflects the dispersion of the medium in which π electrons move. The π electrons in the molecule are treated as "quasi-particles" with reduced mass. The reduced mass and the "nonlocality parameter" are calculated for the π electrons of the butadiene molecule. (Author)

Optics

OPTICS AND SPECTROSCOPY, 1962, VOL. 12, NO. 1, P. 1-82. [1962] 1v.
Order from OSA $15.00 (members $7.50)

Trans. of Optika i Spektroskopiya (USSR) 1962, v. 12, no. 1, 3-156.

DESCRIPTORS: *Optics, *Infrared spectroscopy, Raman spectroscopy, *Mass spectroscopy, Luminescence, Light, Spectrographic analysis, Fluorescence, Periodicals.

Kard, P. G.
THEORY OF ACHROMATIC MULTILAYER INTERFERENCE POLARIZERS. [1962] [8p] 10 refs.
Order from OTS or SLA $1.10 62-10981

Trans. of [Akademiya Nauk Estonskoi SSR, Tallinn. Izvestiya. Seriya Tekhnicheskikh i Fiziko-Matematicheskikh Nauk] 1960, v. 9, no. 1, p. 26-31.

DESCRIPTORS: *Interference, *Polarization, *Light, Reflection, Light transmission, Optical filters, Prisms (Optics), Coatings, Theory.

The method of effective parameters of a multilayer coating is used to calculate coefficients of reflection and transmission of light falling obliquely on a certain coating. The problem is reduced to an analogous problem of normal incidence of light on an "effective" coating. (See also 62-10971)

Lazarev, D. N.
LUMINISCENCIA INFRARROJA DE LA REPRODUCCION (Infrakrasnaya Lyuminestsentsiya v Reproduktsionnoi Tekhnike) (Infrared Luminiscence of Reproduction). 10p. CID: 62-87. (text in Spanish).
Order from OTS or ETC $1.- 62-26287

Trans. of Akademiya Nauk SSSR. Doklady, 1954, v. 96, no. 2, p. 281-282.

DESCRIPTORS: Luminiscence, *Infrared radiation.

R., G.
FABRY-PEROT INTERFEROMETER FOR MILLIMETER WAVES. [1962] 5p. 5 refs.
Order from OTS or SLA $1.10 62-16538

Trans. of Uspekhi Fiz[icheskikh] Nauk (USSR) 1954, v. 52, no. 1, p. 173-178.
Another trans. is available from ATS as ATS-RJ-600.

DESCRIPTORS: *Microwaves, *Interferometers, Design, Operation, Optical instruments.

Slobodskaya, P. V.
SPECTROPHONE WITH MULTIPLE PASSAGE OF RADIATION. [1962] [6]p. 8 refs. [USASIA] Trans. Log no. 1062.
Order from OTS or SLA $1.10 62-32640

Trans. of Optika i Spektroskopiya (USSR) 1958, v. 5, no. 3, p. 342-343.

DESCRIPTORS: *Infrared receivers, Infrared equipment, Infrared radiation, Relaxation time, Absorption, Optical equipment.

A method, consisting in the use of multiple passage of radiation in the receiver chamber, is described, which permits an increase of the signal while working on weak absorbtion bands. (Author)

Solid State Physics

Barth, H.
MONOCHROMATIZATION OF AN X-RAY SPECTRUM LINE. [1962] [60]p. 35 refs.
Order from SLA $5.60 62-14475

Trans. of Zeitschr[ift] für Naturforschung (West Germany) 1958, v. 13a, no. 8, p. 680-698.

DESCRIPTORS: *X-ray spectrum, *Monochromatic light, Resolution, Single crystals, *Quartz crystals, Crystal structure, Lattices, X-ray diffraction analysis.

Partial regions with a spectrum width of 0.02XE of the X-ray spectrum can be screened out by means of suitably arranged diaphragms on lattice plane $2\bar{3}\bar{5}4$ of a particularly good quartz single crystal. Thus, further monochromatization of the $CuK_{\alpha 1}$-line to 1/30 of its "natural" line half-width is possible. Various new types of experimental arrangements are described for stigmatic representation of real and ideal single crystal surfaces with x-rays. These BRAGG-reflections which extend over the complete crystal make it possible to study the real structure of crystals. (Author)

Bauer, O. and Hansen, M.
THE INFLUENCE OF THIRD METALS ON THE CONSTITUTION OF BRASS ALLOYS. [1962] 10p. (refs. figs. tables omitted).
Order from SLA $1.10 62-16925

Trans. of Z[ei]ts[chrift] f[ür] Metallkunde (Germany) 1929, v. 21 [no. 5] p. 145-151.

DESCRIPTORS: Metals, Molecular structure, Alloys, *Brass, *Zinc alloys, *Copper alloys, *Lead alloys, Metallurgical analysis.

Bauer, O. and Hansen, M.
THE INFLUENCE OF THIRD METALS ON THE CONSTRUCTION OF BRASS ALLOYS. [1962] 7p. (refs. figs. tables omitted).
Order from SLA $1.10 62-16926

Trans. of Z[ei]ts[chrift] f[ür] Metallkunde (Germany) 1929 [v. 21, no. 5] p. 190-196.

DESCRIPTORS: Metals, Molecular structure, Alloys, *Brass, *Copper alloys, *Lead alloys, *Zinc alloys, Chemical equilibrium, Annealing.

Bergman, A. G. and others.
MELTING POINT DIAGRAM OF THE QUATERNARY RECIPROCAL SYSTEM (NH_4, K) (Cl, NO_3, H_2PO_4). [1962] [34]p. 7 refs. [DSIR] NLL M. 3443.
Order from OTS or SLA $3.60 62-24898

Trans. of [Akademiya Nauk SSSR]. Sektor Fiz[iko]-Khim[icheskogo] Anal[iza]. Izvestiya, 1947, v. 15, p. 200-233.

DESCRIPTORS: *Crystals, *Melting, *Ammonia, *Potassium, *Chlorine, *Nitrates, *Phosphates, Hydrogen compounds.

A number of sections of the prism of the (NH_4, K) (Cl, NO_3, H_2PO_4) system are investigated with reference to compositions of solid phases in various zones and eutectic points. Results are presented in tables) and Jaenecke diagrams. (Author)

Brissoneau, Pierre.
CONTRIBUTION TO THE STUDY OF THE MAGNETIC DRAG OF DIFFUSION OF CARBON IN ALPHA IRON. [1962] [78]p. 16 refs.
Order from SLA $7.60 62-16961

Trans. of Physics and Chemistry of Solids (U. S.) 1958, v. 7, p. 22-51.

DESCRIPTORS: *Iron, *Carbon, Solubility, *Diffusion, Lattices, Stability, Magnetic susceptibility, Crystal structure.

Chernaya, N. S.
ENERGETISCHE VERTEILUNG DER ELEKTRONENZUSTÄNDE AUF EINER GERMANIUMOBERFLÄCHE IM SEHR HOHEN VAKUUM. (Energy Dissipation of the Electron States on a Germanium Surface in a very High Vacuum). (text in German).
Order from T. I. B. $1.55

Trans. of mono. Fizika Tverdogo Tela: Sbornik Statei (Solid State Physics: Collection of Articles) v. 2 [Moscow] 1959, p. 79-82.

DESCRIPTORS: *Germanium, Surface properties, High vacuum valves, Electrons.

Faintskii, V. M.
DESARROLLO DE LOS DIELECTRICOS VINILICOS (Razvitie Vinil'nykh Dielektrikov) (Development of Vinyl Dielectrics). 8p. CID: 62-34. (text in Spanish).
Order from OTS or ETC $0.90 62-26234

Trans. of Elektrichestvo (USSR) 1955, no. 4, p. 84-85.

DESCRIPTORS: *Dielectrics. Acetates. Vinyl radicals

Fast, J. D., Meijering, J. L., and Verrijp, M. B.
INTERNAL FRICTION IN THE FERRITIC Fe-Mn-N ALLOYS. [1962] [7]p. 7 refs.
Order from SLA $1.10 62-14488

Trans. of Métaux (Corrosion-Industries) (France) 1961 [v. 36] no. 427, p. 112-114.

DESCRIPTORS: *Internal friction, *Iron alloys, *Manganese alloys, Nitrogen, Alloys, Atomic structure, Lattices.

Gorkun, Yu. I.
THE FIELD EFFECT THEORY AT LOW TEMPERATURES. 9 June 61 [8]p. 7 refs. [USASIA] Trans. Log no. 1163.
Order from OTS or SLA $1.10 62-32618

Trans. of #Fizika Tverdogo Tela (USSR) 1961, v. 3, no. 4, p. 1061-1065.

DESCRIPTORS: *Semiconductors, Electrical conductance, Electric fields, Electrical effects, Theory, Temperature.

The author calculates the volume charge and conductivity change as functions of zone curvature on a semiconductor surface with arbitrary filling of local levels. (Author)

Heinlein, Walter.
THE INERTIA OF p-n JUNCTION DIODES DRIVEN BY STRONG SINE WAVES. [1960] 10p. 7 refs. MDF H-104.
Order from OTS $0.50 62-11532

Trans. of Arch[iv der] Elektr[ischen] Über[tragung] (West Germany) 1958, v. 12, no. 11, p. 510-514.

DESCRIPTORS: *Semiconductors, *Diodes, Germanium, Electrical properties, Field emission, Wave characteristics.

Kalashnikov, S. G. and Yunovich, A. E.
VARIATION OF THE CONDUCTIVITY OF GERMANIUM BY AN INTERNAL ELECTRIC FIELD [Izmenenie Provodimosti Germaniya Vneshnim Elektricheskim Polem]. [1961] 3p. 9 refs. MDF K-102
Order from OTS $0.50 62-11588

Trans. of Zh[urnal] Tekh[nicheskoi] Fiz[iki] (USSR) 1955, v. 25, no. 5, p. 952-954.

DESCRIPTORS: *Semiconductors, *Germanium, Electrical properties, *Conductivity, *Electric fields, Surface properties.

Experiments show that the surface preparation changes the character of the germanium surface levels substantially. The hole conduction of the surface layer, usually observable on the free germanium surface, transforms into electron conduction for the paraffin near the surface. (Author)

Kaplyanskii, A. A. and Przhevuskii, A. K.
PIEZOELECTRIC EFFECT IN RUBY CRYSTALS. [1962] 8p. 17 refs.
Order from OTS or SLA $1.10 62-18054

Trans. of Akademiya Nauk SSSR. Doklady, 1962, v. 142, no. 2, p. 313-316.

DESCRIPTORS: *Ruby, *Single crystals, *Piezoelectric effect, Luminescence, Absorption, Deformation.

Luminescence centers and absorption in ruby crystals were studied. The results indicated that the uniaxial deformation causes a considerable reversible effect on all structural elements of absorption and luminescent spectra of ruby. This effect varies for different lines and depends on the direction of P axis. In the case of $P \parallel C_3$ (symmetry does not change) only displacement of lines was observed, and in the case of $P \perp C_3$ (decrease of a symmetry) both displacement and splitting of lines takes place.

Kogan, Sh. and Sandomirski, V. B.
ZUR ELEKTRONENTHEORIE DER CHEMISORPTION AN EINER REALEN HALBLEITEROBERFLÄCHE. (On the Electronic Theory of the Chemisorption at a Real Semiconductor Surface). 5p. (Text in German).
Order from T. I. B. $1.40

Trans. of Akademiya Nauk SSSR, Doklady, 1959, v. 127, no. 2, p. 377-379.
Other translations are available from OTS or SLA $1.10 as 62-33082, MDF K-173 [1959] 4p. and from CB $5.00

DESCRIPTORS: *Electrons, Surface area, Semiconductors, *Adsorption.

Kokosh, G. V. and Sinani, S. S.
DER EINFLUSS VON VERUNREINIGUNGEN AUF DIE THERMOELEKTRISCHEN EIGENSCHAFTEN DER FESTEN LÖSUNG Sb_2Te_3 - Bi_2Te_3 (The Influence of Impurities on the Thermoelectric Properties of the Solid Solution Sb_2Te_3 - Bi_2Te_3 - Bi_2Te_3). (text in German). 3p.
Order from T. I. B. $1.40

Trans. of mono. Fizika Tverdogo Tela: Sbornik Statei (Solid State Physics: Collection of Articles) v. 1 [Moscow] 1959, p. 89-99.

DESCRIPTORS: *Chemical impurities, *Thermoelectricity, *Solutions, Solids.

Kosenko, V. E., Miselyuk, E. G., and Khomenko, L. A.
DER EINFLUSS EINES ELEKTRISCHEN FELDES AUF DIE DIFFUSION VON SILBER IN GERMANIUM. (The Influence of an Electric Field on the Diffusion of Silver in Germanium). 3p. (text in German).
Order from T. I. B. $1.40

Trans. of mono. Fizika Tverdogo Tela: Sbornik Statei (Solid State Physics: Collection of Articles) v. 1 [Moscow] 1959, p. 100-103.

DESCRIPTORS: *Electric fields, *Diffusion, *Silver, *Germanium.

Lashkarev, V. E., Miselyuk, E. G. and Glinchuk, K. D.
DER EINFLUSS DES TEMPERNS AUF DEN ZUSTAND EINIGER VERUNREINIGUNGEN IM GERMANIUM. (The Influence of Annealing on Some Impurities in Germanium). (text in German).
Order from T. I. B. $1.85

Trans. of mono. Fizika Tverdogo Tela: Sbornik Statei (Solid State Physics: Collection of Articles) v. 1 [Moscow] 1959, p. 114-121.

DESCRIPTORS: *Germanium, *Heat treatment, Chemical impurities

Lazarev, B. and Galkin, A.
ON THE CHANGE IN THE SUPERCONDUCTIVITY OF TIN UNDER THE INFLUENCE OF INHOMOGENEOUS DEFORMATION. [1961] 10p. 11 refs. MDF L 117.
Order from OTS $0.50 62-11296

Trans. of Zh[urnal] Eksp[erimental'noi i] Teor[eticheskoi] Fiz[iki] (USSR) 1944, v. 14, no. 12, p. 474-480.

DESCRIPTORS: *Superconductivity, *Tin, *Thin films, Wire, Deformation, Crystal structure.

It is shown that inhomogeneously deformed (stretched here and there, compressed here and there) superconductor acquires anomalous properties, radically increased values of T_k, H_k and dH_k/dT, radically reduced value of I_k, i.e., a property completely analogous to the properties of fine films obtained by condensation on a backing cooled by liquid helium or liquid hydrogen appears. It is assumed that the anomalies in both the films and the deformed wires are the result of the very same cause, distortion of the crystal lattice. The results obtained are also cited in connection with the diffusion of transitions in polycrystals. (Author)

Lushchik, Ch. B.
THERMAL IONIZATION ENERGY OF COLORED CENTERS IN ALKALI-HALIDE CRYSTAL PHOSPHORS [Energii Teplovoi Ionizatsii Tsentrov Okraski v Shchelochno-Galoidnykh Kristallofosforakh]. [1961] 7p. 15 refs. MDF L-110.
Order from OTS $0.50 62-11303

Trans. of A[kademiya] N[auk] SSSR. Doklady, 1955, v. 101, no. 5, p. 833-836.

DESCRIPTORS: *Crystals, *Alkali metal compounds, Sodium, Potassium, *Halides, Chlorine, Bromine, Iodine, Ionization, Spectrographic analysis.

The thermal ionization energy (E_T) and the probability (p_0) of the isoenergetic redistribution of energy between the ground and the ionized states of the trapping center were experimentally determined for certain colored centers in NaCl, NaBr, KCl, KBr, and KI crystals.

Meijering, J. L.
CONSIDERATIONS ON THE SNOEK EFFECT IN THE CASE OF NON-EQUIVALENT SITES FOR INTERSTITIAL ATOMS. [1962] [11]p. 7 refs.
Order from SLA $1.60 62-14489

Trans. of Métaux (Corrosion-Industries) (France) 1961, v. 36 [no. 427] p. 107-111.

DESCRIPTORS: *Iron alloys, *Manganese alloys, Nitrogen, Alloys, Crystals, Lattices, *Internal friction, Damping, Deformation, Thermodynamics

Ormont, B. F.
ENERGY CHARACTERISTICS OF SOME SEMICONDUCTORS WITH THE STRUCTURE OF ZINC BLENDE (ARSENIDES AND ANTIMONIDES OF GALLIUM AND INDIUM). [1962] 10p. 13 refs.
Order from OTS or SLA $1.10 62-18091

Trans. of Zhurnal Neorganicheskoi Khimii (USSR) 1958, v. 3 [no. 6] p. 1281-1285.
Another trans. is available from OTS $3.75 in AEC-tr-4454, 1961, 280p.

DESCRIPTORS: *Semiconductors, *Zinc compounds, Sulfides, *Gallium compounds, *Indium compounds, Arsenides, Antimonides, Chemical bonds, Energy, Enthalpy.

The possible types of semiconductors were examined according to the character of the chemical bond in them. The atomization energies of several semiconductors with the structure of zinc blende were calculated, and the values of the atomization energy for the arsenides and antimonides of gallium and indium were found by interpolation. By way of orientation, the enthalpy values of the formation of the arsenides and antimonides of gallium and indium were estimated. The latter must be negative, but small as an absolute value, not exceeding 20 large calories/mol for arsenides, and approaching zero for antimonides (several calories per mol). The specific surface energies of a series of semiconductors with diamond and zinc blende structures were estimated. (Author)

Pfenninger, H. H. and Laves, F.
CATION MIGRATION AND FORMATION OF COLOR CENTERS BY ELECTROLYSIS IN QUARTZ PLATES PERPENDICULAR TO THE OPTIC AXIS. [1962] 5p. 5 refs.
Order from SLA $1.10 62-16606

Trans. of die Naturwissenschaften (West Germany) 1960, v. 47 [no. 12] p. 276.

DESCRIPTORS: Quartz crystals, *Color centers, Production, Ions, Motion, Electrolysis, Optics.

Provotorov, B. N.
ON MAGNETIC RESONANCE SATURATION IN CRYSTALS. [1962] 18p. 9 refs.
Order from OTS or SLA $1.60 62-18002

Trans. of #Zh[urnal] Eksp[erimental'noi i] Teor[eticheskoi] Fiz[iki] (USSR) [1961] v. 41, no. 5, p. 1582-1591.

DESCRIPTORS: *Crystals, Solids, *Resonance, Resonance absorption, *Magnetic moments.

A kinetic equation for magnetic resonance in solid bodies is deduced from the quantum equation for the density matrix. By means of this equation are derived the equations describing the change of signals of absorption and dispersion when the amplitude of the high-frequency field H_1 is increased. These equations indicate that as H_1 increases, the observed absorption and dispersion lines become narrower, and that $X''(\omega, H_1)$, decreases more rapidly compared to $X'(\ , H_1)$, as was previously shown experimentally by A. Redfield (Phys. Rev. 98: 1787, 1955).

Robin, Jean.
EFFECT OF PRESSURE ON SOME SEMICONDUCTOR PROPERTIES. [1962] 19p. (figs. refs. tables omitted).
Order from SLA $1.60 62-16558

Trans. of J[ournal de] Phys[ique et le] Radium (France) 1960, v. 21 [no. 2] p. 130-140.

DESCRIPTORS: *Semiconductors, Germanium, Silicon, Tellurium, *Crystal structure, Pressure, Resistance.

After an elementary survey of some characteristic properties, we summarize the principle work of various authors on the influence of pressure on intrinsic resistivity of different semiconductors. This effect is primarily indicated by a variation in the value E_g of the forbidden band with pressure. We then give a sketch of two other methods of determining the pressure coefficient $(\partial E_g/\partial P)_T$: the effect of pressure on the resistivity of the p-n junction and the displacement of the absorption edge with pressure. (Author)

Shamovskii, L. M. and Rodionova, L. M.
INTERCRYSTALLINE FILMS IN SINGLE CRYSTALS OF ALKALI SALTS AND SOME OF THEIR PROPERTIES [Mezhkristallicheskie Plenki v Monokristallakh Shchelochnogaloidnykh Solei i Nekotorye Ikh Svoistva]. [1962] 4p. 9 refs.
Order from OTS or SLA $1.10 62-16581

Trans. of Akademiya Nauk SSSR. Doklady, 1953, v. 92 [no. 5] p. 939-942.
#Also available from SLA as RT-996.

DESCRIPTORS: *Single crystals, Growth, *Phosphors, *Color centers, Lattices, Dislocations, Impurities, *Alkali metals, Electric fields, Chemical reactions. Films. Salts.

Shekhter, L. N., Myasnikov, I. A., and Pshezhetskii, S. Y.
CORRELATION BETWEEN THE CATALYTIC PROPERTIES OF ZINC OXIDE AND ZINC SULFIDE AND THEIR LUMINESCENCE. [1962] 6p. (4 figs. refs. omitted).
Order from OTS or SLA $1.10 62-16578

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1956, v. 109, no. 6, p. 1163-1166.

DESCRIPTORS: *Luminescence, *Sulfides, Oxides, *Zinc compounds, Catalysis, *Semiconductors, Conductivity, Crystals.

Experimental data show the existence of a linear relationship between catalytic and luminescent properties of zinc oxide. These data confirm previous hypotheses on the nature of catalytic centers of zinc oxide (at least in the relationship of the studied reactions) and the role of semiconductive properties of ZnO in catalysis. The catalytically active centers in pure zinc sulfide are due to the presence of an overstochiometric quantity of Zn, as in zinc oxide. In as much as the catalytic properties of ZnO and ZnS depend upon the surface, non-stochiometric zinc ions, and the electroconductivity and luminesence upon the centers also located in the depth of the crystal, the quantitative relationship between these magnitudes depends upon the size of the crystals.

Shmelev, G. I.
MATERIALIEN FÜR THERMOELEMENTE AUF DER GRUNDLAGE TERNÄRER INTERMETALLISCHER VERBINDUNGEN. (Materials for Thermoelements on the Basis of Ternary Intermetallic Combinations). (text in German).
Order from T. I. B. $1.85

Trans. of mono. Fizika Tverdogo Tela: Sbornik Statei (Solid State Physics: Collection of Articles) v. 1 [Moscow] 1959, p. 63-75.

DESCRIPTORS: *Thermoelectricity, Intermetallic compounds.

Smolenskii, G. A., Agranovskaya, A. I., and Krainik, N. N.
FERROELECTRIC PROPERTIES OF $BaTiO_3$-$PbZrO_3$ SOLID SOLUTIONS [Segnetoelektricheskie Svoistva Tverdykh Rastvorov $BaTiO_3$-$PbZrO_3$]. [1962] 5p. 7 refs.
Order from OTS or SLA $1.10 62-16577

Trans. of Akademiya Nauk SSSR. Doklady, 1953, v. 91 [no. 1] p. 55-58.

DESCRIPTORS: *Ferroelectric materials, *Barium compounds, Titanates, *Lead compounds, Zirconates, *Metallic crystals.

Suchet, J. P.
RULES FOR PREDICTING THE SEMI-CONDUCTIVITY IN MINERAL CRYSTALLINE NETWORKS. [1962] 19p. (2 figs. 6 tables 48 refs. omitted) 41 refs.
Order from SLA $1.60 62-16735

Trans. of Phys[ics and] Chem[istry of] Solids (U. S.) 1959, v. 12 [no. 1] p. 74-88.
Another trans. is available from SLA $2.60 as 62-16203 [1962] [21]p.

DESCRIPTORS: *Inorganic substances, Crystals, Lattices, *Semiconductors, Solid state physics, Minerals.

Tammann, G. and Hinnüber, J.
THE INTERNAL FRICTION OF MERCURY. [1962] 8p. (fig. omitted) 7 refs.
Order from SLA $1.10 62-16535

Trans. of Z[eitschrift für] Anorg[anische] Chem[ie] (Germany) 1927, v. 167, p. 230-236.

DESCRIPTORS: *Mercury, Internal friction, Capillary tubes.

Venevtsev, Yu. N. and Zhdanov, G. S.
THE X-RAY ANALYSIS OF FERROELECTRIC SOLUTIONS WITH PEROVSKITE STRUCTURE. 28 Aug 62 [18]p. 18 refs. [USASIA] Trans. Log no. 1034.
Order from OTS or SLA $1.60 62-32905

Trans. of #Akademiya Nauk SSSR. Izvestiya. [Seriya Fizicheskaya] 1956, v. 20, no. 2, p. 178-184.

DESCRIPTORS: *Ferroelectric crystals, *Ferroelectric materials, Lead compounds, Titanates, Zirconates, Antiferroelectricity, Polarization, Crystal structure, X-ray diffraction analysis

Vjatkin, A. P. and Vertropakhov, V. N.
SURFACE ENERGY OF GERMANIUM FACES. [1962] 7p. 9 refs.
Order from OTS or SLA $1.10 62-18090

Trans. of Izvestiya Vysshikh Uchebnykh Zavedenii. Fizika (USSR) 1959, no. 2, p. 169-170.

DESCRIPTORS: *Germanium, *Single crystals, Surface properties, Energy, Work functions.

The ratios of the surface energies of the faces of germanium single crystals are calculated. A correlation of the surface energy ratios and the work functions of different crystal faces, similar to the one exhibited in nickel, is not observed.

Vol'kenshtein, F. F. and Sandomirskii, V. B.
THE EFFECT OF AN EXTERNAL ELECTRIC FIELD ON THE ADSORPTIVE CAPACITY OF A SEMICONDUCTOR. [1958] 4p.
Order from OTS or SLA $1.10 62-16711

Trans. of Akad[emiya] Nauk SSSR. Doklady, 1958, v. 118, no. 5, p. 980-982.
Other translations are available from ATS $5.75 as ATS-94L28R [1958] 4p. and from CB $5.00.

DESCRIPTORS: *Electric fields, *Semiconductors, Adsorption.

For abstract see Technical Translations 1: 159, 1959.

Theoretical Physics

Klimontovich, Yu. L.
ON THE DIAMAGNETISM OF SUPERCONDUCTORS. [1961] 5p. 7 refs. MDF K-123.
Order from OTS $0.50 62-11583

Trans. of A[kademiya] N[auk] SSSR. Doklady, 1955, v. 104, no. 1, p. 44-46.

DESCRIPTORS: *Superconductors, Theory, Magnetic fields, Electrons, Ions.

It is shown that the London equation holds for a system of charged particles taking only magnetic interaction into account, only when the particles form a Bose system. The London equation does not hold for a Fermi system and in the classical statistics case and, therefore, the magnetic field penetrates deep into the system. (Author) (See also 62-11584, 62-23147)

Klimontovich, Yu. L.
SOME PROBLEMS OF THEORY OF NONUNIFORM NONISOTHERMIC PLASMA [PTS.] I-II, tr. by S. Shewchuck. 21 Feb 55, 25p. 16 refs.
Order from OTS or SLA $2.60 UCRL Trans-220 (L)

Trans. of Zhurnal Eksperimental'noi i Teoreticheskoi Fiziki (USSR) [1951] v. 21, no. 11, p. 1284-1302.

DESCRIPTORS: *Plasma physics, *Electrons, *Elastic scattering, Velocity, Statistical functions, Integral equations, Theory, Gases, Atoms, Particles.

An equation is studied considering the coulomb interaction of charged particles and their interaction through collision with atoms of a gas. A distribution function for velocities is computed for a case when the effective cross section of an elastic scattering of electrons is inversely proportional to the velocity. (Author)

Klimontovich, Yu. L.
TO THE NEW PHENOMENOLOGICAL THEORY OF SUPERCONDUCTIVITY. [1961] 5p. 2 refs. MDF K-124.
Order from OTS $0.50 62-11584

Trans. of A[kademiya] N[auk] SSSR. Doklady, 1955, v. 104, no. 3, p. 384-386.

DESCRIPTORS: *Superconductivity, Theory, Thin films, Magnetic fields, Electrons, Excitation.

The question of the form of the Hamiltonian is clarified, which corresponds to the system of equations of the Ginzburg-Landau phenomenological theory, (Zhur. Eksptl. i Teoret. Fiz. 20: 1064, 1950; available in translation from LC or SLA as 60-13723). The possible physical interpretation of the parameters α and β is considered. (Author)

Vasil'ev, K. V. and Isachenko, A.
SOBRE EL CALENTAMIENTO POR PLASMA EN LOS PROCESOS DE SOLDADURA (O Nagreve Plazmoi v Svarochnykh Protsessakh) (Plasma Heating in Welding Processes). 2p. (foreign text included). 4 refs.
CID: 62-60. (text in Spanish).
Order from OTS or ETC $1.10 62-26260

Trans. of Svarochnoe Proizvodstvo (USSR) 1959, no. 9, p. 5-6.

DESCRIPTORS: *Welding, Plasma physics.

Yakovlev, [V.] A.
INFLUENCE OF AN ELECTRIC FIELD ON CURRENT CARRIER MOBILITY IN SEMICONDUCTORS. [1960] 5p. 7 refs. MDF I-125.
Order from OTS $0.50 62-11412

Trans. of Izvestiya V[ysshikh] U[chebnykh] Z[avedenii] Fizika (USSR) 1960, no. 1, p. 12-15.

DESCRIPTORS: *Semiconductors, Theory, Electric fields, Electric currents, Scattering, Germanium.

Expressions have been obtained for the mobility taking into account scattering by thermal vibrations of the atoms and by the ionized impurities at high and low temperatures. (Author)

Thermodynamics

Borishanskii, V. M.
CRITICAL LOADS DURING BOILING, AND THERMODYNAMIC SIMILARITY. 18 Jan 62 [14]p. 20 refs.
FTD-TT-62-56; AD-270 760.
Order from OTS or SLA $1.60 62-19264

Unedited rough draft trans. of mono. (paper) from Conference [on] Heat [and Mass] Transfer [held in] Minsk, 5-10 June 61. [Proceedings].

DESCRIPTORS: *Nucleate boiling, *Fluids, Fluid flow, Viscosity, *Thermodynamics, Hydrodynamics, Loading, Stresses, Physical properties, Pressure, Temperature, Vaporization, Bubbles, Heat, Conductivity, Surface tension, Surface temperature, Surface

the physical characteristics of working media, the heat-transfer coefficients, and critical loads during developed nucleate boiling. The calculation formulas for determining critical loads during bulk boiling have the form

$$q_{crp} = q_{crp_*} \cdot F_1\left(\frac{P}{P_{cr}}\right) = A_2 \phi_2(P_*) \cdot F_1\left(\frac{P}{P_{cr}}\right).$$

The proposed method can also be used to generalize other cases of heat transfer in working media on the saturation line. (Author)

Gurvich, L. V., Kvlividze, V. A., and Rtishcheva, N. P.
THERMODYNAMIC FUNCTIONS OF MONATOMIC AND DIATOMIC GASES IN A WIDE TEMPERATURE RANGE. V. ALKALI METALS IN THE IDEAL-GAS STATE TO 10,000°K. 23 Apr 62 [9]p. 13 refs.
FTD-TT-62-415.
Order from OTS or SLA $1.10 62-25840

Unedited rough draft trans. of #[Zhurnal Fizicheskoi Khimii] (USSR) 1962, v. 36, no. 1, p. 219-222.

DESCRIPTORS: *Thermodynamics, Functions, *Gases, *Alkali metals, Lithium, Sodium, Potassium, Rubidium, Cesium.

On the basis of the method proposed earlier (Zhur. Fiz. Khim. 35: 1672, 1961) the functions Φ_T^*, S_T°, $H_T^\circ - H_0^\circ$ of vaporized Li, Na, K, Rb, and Cs were calculated at 10,000K°. (Author)

Kazavchinskii, Ya. Z. and Tabachnikov, A. G.
THE EQUATION OF STATE FOR A STOICHIOMETRIC NITROGEN-HYDROGEN MIXTURE. 9 Apr 62 [8]p. 6 refs. FTD-TT-62-112.
Order from OTS or SLA $1.10 62-25542

Unedited rough draft trans. of Inzhenerno-Fizicheskii Zhurnal (USSR) 1961, v. 4, no. 1, p. 116-119.

DISCRIPTORS: Gases, *Mixtures, *Hydrogen, *Nitrogen, *Equations of state, Pressure, Volume.

Kravchuk, E. M.
DETERMINATION OF THE THERMAL COEFFICIENTS OF FRIABLE AND SOLID SUBSTANCES BY THE METHOD OF PLANE THERMAL WAVES (Opredelenie Teplovykh Koeffitsientov Sypuchikh i Tverdykh Materialov) tr. by A. Pingell. 20 Feb 62, 13p. 10 refs. N R L Trans. no. 885.
Order from OTS $0.50 62-11609

Trans. of Inzhenerno-Fizicheskii Zhurnal (USSR) 1958, v. 1, no. 10, p. 29-37.

DESCRIPTORS: *Thermal insulation, *Insulating materials, Thermal conductivity, Heat tolerance, Diffusion, Thermal diffusion.

The method of determination of heat coefficients by means of plane heat waves in a two-component half-limited body is suitable for the determination of heat

conductivity, temperature diffusity and heat absorption of heat-insulating materials on the basis of one experiment. It combines several positive qualities of stationary and non-stationary methods. (Author)

Rusin, A. D. and Tatevskii, V. M.
THE NATURE OF THE GREEN LIGHT EMISSION AND THE COMPOSITION OF THE PRODUCTS OBTAINED BY BURNING BORON AT 3100°K.
2 Apr 62 [9]p. 11 refs. FTD-TT-62-228; SC-1094; ASTAR 1978.
Order from OTS or SLA $1.10 62-24348

Unedited rough draft trans. of Akademiya Nauk SSSR. Doklady, 1961, v. 139, no. 3, p. 630-633.

DESCRIPTORS: *Boron, Boron compounds, Oxides, Hydrogen compounds, Borides, *Combustion, *Photoemission, Spectrographic analysis.

Results of the experiments support the conclusions of A. A. Mal'tsev and V. M. Tatevskiy, and Kaskan and Milliken that the fluctuation bands belong to the BO_2 radical. It was established that the fundamental boron-containing combustion products under the conditions of the experiment at 3080° K are HBO_2 and BO_2.

Wave Propagation

Aliev, O. Kh. M.
PROPAGATION AND REFLECTION OF SPHERICAL SHOCK WAVES FROM A FREE BOUNDARY IN AN ELASTIC MEDIUM (Rasprostranenie i Otrazhenie ot Svobodnoi Granitsy Sfericheskikh Udarnykh Voln v Uprugoi Srede). 28 June 61 [19]p. 3 refs. JPRS: 9542.
Order from OTS or SLA $1.60 61-27076

Trans. from Akademiya Nauk Azerbaidzhanskoi SSR, Baku. Izvestiya. Ser[iya] Fiz[iko]-matematicheskikh i Tekhnicheskikh Nauk, 1960, no. 4.

DESCRIPTORS: *Shock waves, Propagation, Reflection, Stresses, Boundary layer, Elasticity, Spheres, Wave analysis

Analyses are made of (1) reflection of spherical shock waves from a free plane surface of an elastic half-space, caused by an impulsive load applied on the surface of a spherical cavity of radius r_0 inside that half-space, and (2) propagation and reflection of spherical shock waves from a free boundary in an elastic medium, originating from an application of shock pressure p(t) on the surface of the crushing zone (cavern), spreading inside this medium. The latter occurs, for example, during a rupture or shock in a brittle medium. A spreading zone of crushing is born near the region of the direct contact of the shock pressure with the brittle medium. Inside this zone the material cracks and crumbles. In all directions from this zone spreads a shock wave of great intensity. Wherever it reaches the free surface of the medium, the wave reflects; under certain conditions, tensile pulls can be generated in the reflected wave, causing a breaking up of materials. (See also PB 126 210)

Keilis-Borok, V. I.
ON THE PROPAGATION OF STATIONARY VIBRATIONS IN A LAYER LYING BETWEEN TWO SEMI-SPACES (K Voprosu o Rasprostranenii Statsionarnykh Kolebanii v Sloe, Lezhashchem Mezhdu Dvumya Poluprostranstvami). [1962] [32]p. (foreign text included) 9 refs.
Order from OTS or SLA $3.60 62-16437

Trans. of Akademiya Nauk SSSR. Geofizicheskii Institut. Trudy, 1953, v. 20(147) p. 20-36.

DESCRIPTORS: *Wave analysis, *Vibration, Propagation, *Elasticity.

Sinusoidal vibrations excited by a points scource in an ideally elastic medium consisting of a layer lying between two semi-spaces are considered. It is shown that the main part of the displacement remote from the source consists of waves of a specific type. Some of the properties of these waves are investigated. (Author)

Kinber, B. E.
SLOW FADING OF SIGNALS DURING TROPOSHERIC SCATTER. 16 June 61 [3]p. 8 refs. USASIA Trans. Log no. 1172.
Order from OTS or SLA $1.10 62-32616

Trans. of #Radiotekhnika i Elektronika (USSR) 1960, v. 5, no. 3, p. 221-222.

DESCRIPTORS: *Radio signals, Scattering, *Attenuation, Refraction, Atmospheric refraction.

It is shown that the normal logarithmic distribution of tropospheric scatter can be obtained from the supposition that slow fading of signals is related to changes in refraction.

Tikhonov, V. I. and Amyantov, I. N.
PROBABILITY DENSITIES FOR THE DURATION OF OVERSHOOTS IN FLUCTUATIONS. [1961] [16]p. 15 refs.
Order from OTS or SLA $1.60 62-10187

Trans. of #Radiotekhnika (USSR) 1960, v. 15, no. 9, p. 10-20.
Another trans. is available from OTS $1.60 as AD-264 154, STL-TR-61-5110-14, Mar 61, 16p.

DESCRIPTORS: *Information theory, Communications theory, *Radio signals, Noise (Radio), Radio receivers, *Pulse communication systems, Density, Statistical analysis, Statistical distributions, Correlation techniques, Pulse discriminators.

Three approximate methods for calculating the probability densities for the durations of overshoots in normal stationary fluctuations are briefly examined and some experimental results are given. The regions of applicability of the various methods are shown by a comparison of the calculated probability densities with the experimental results.

RESEARCH METHODS, TECHNIQUES AND EQUIPMENT

ABSTRACTS PERTAINING TO COMMUNIST CHINA IN SOVIET ABSTRACTS JOURNALS: AUTOMATION AND RADIO ELECTRONICS, 1961, NO. 12; ELECTRICAL AND POWER ENGINEERING, 1961, NO. 12; GEOPHYSICS, 1961, NO. 7; TRANSPORT, 1961, NOS. 11-12. 19 June 62 [10]p. JPRS: 14190.
Order from OTS or SLA $1.10 62-25513

Trans. of selected abstracts from Referativnyi Zhurnal. Avtomatike i Radioelektronika (USSR) 1961, no. 12; Referativnyi Zhurnal. Elektrotekhnika i Energetika (USSR) 1961, no. 12; Referativnyi Zhurnal. Geofizika (USSR) 1961, no. 7; Referativnyi Zhurnal. Transport (USSR) 1961, nos. 11-12.

DESCRIPTORS: Abstracting, Literature, *China, *Magnetic amplifiers, Amplifiers, Theory, *Weather forecasting, Partial differential equations, *Railroads. (Research Methods, Techniques and Equipment, TT,

SOME RECENT REPORTS OF THE USSR ACADEMY OF SCIENCES. 17 Aug 62 [44]p. 27 refs. JPRS: 14888.
Order from OTS or SLA $4.60 62-32446.

Trans. of Akademiya Nauk SSSR. Doklady, 1962, v. 143, no. 6, p. 1243-1245, 1304-1308, 1317-1320, 1336-1339, 1355-1357.

DESCRIPTORS: Automatic, *Control, Theory, Inequalities, *Semiconductors, *Blood pigments, *Polymers, Weather forecasting, *Differential equations, Integration, Algebra.

Contents:
Optimal sliding states, by R. V. Gamkrelidze
The solution of certain matrix inequalities in automatic control theory, by V. A. Yakubovich

Semiconducting properties of blood pigments, by A. T. Vartanyan
Significance of conjugation and orderliness for semiconducting properties of polymers, by A. A. Dulov and others
Reduction of the system of differential equations used in short-term weather forecast to a system of algebraic equations, by I. A. Kibel'.

Communication Theory

Beletskii, A. F. and Khrapovitskii, A. V.
A SPECTRAL-BAND TECHNIQUE FOR VOICE COMPRESSION (BAND VOCODER). 14 May 62 [4]p. FTD-TT-61-312.
Order from OTS or SLA $1.10 62-25540

Unedited rough draft trans. of Soviet patent 135516 (614257/26) 18 Dec 58.

DESCRIPTORS: *Speech, *Speech transmission, *Voice communication systems, Intelligibility, Pitch discrimination, Corrections, Data transmission systems.

To increase the intelligibility of synthetic speech, information is transmitted on the levels of a limited number of voice signal components and attenuation is controlled by the synthesizing circuit's cosine corrector. (Author)

Inomata, Shuji.
A NEW METHOD OF PITCH EXTRACTION USING A DIGITAL COMPUTER. [1962] [5]p. 2 refs.
Order from SLA $1.10 62-14478

Trans. of [Nihon Onkyo Gakkaishi (Japan) 1960, v. 16, no. 4, p. 283-285].

DESCRIPTORS: Speech, *Speech transmission, Voice communication systems, *Pitch discrimination, *Digital computers, Time lag theory, Sound transmission.

The present suggestion is based on the fact that the methods used hitherto are not necessarily suitable, considering both the properties of the voice pitch and the calculation time. Therefore, a "locally almost periodical function" has been adopted as the mathematical model for voiced speech, and the fundamental (Research Methods--Communication Theory, (i.e. the pitch frequency) is defined as "local periodicity". The voice pitch is quickly found in the "time domain" as "local periodicity", by evaluating suitable distance measurements. The present method may be useful for analyzing not only speech wave forms, but also the wave forms of electrocardiography and the forms of brain waves. (Author)

SOCIAL SCIENCES

Gsell, O[tto].
SMOKING HABITS OF PHYSICIANS IN SWITZERLAND. [1962] 25p.
Order from K-H $31.25 K-H 5497-c

Trans. of Schweizerische Medizinische Wochenschrift 1956 [v. 86] no. 23, p. 669-675.

DESCRIPTORS: Switzerland, *Medical personnel, *Cigarettes.

Office of Technical Services, Dept. of Commerce, Washington, D. C.
CIVIL DEFENSE. July 62, 11p. 168 refs. OTS Selective Bibliography SB-501.
Order from OTS $0.10 OTS SB-501

DESCRIPTORS: *Civilian defense systems, *Bibliography, Shelters, Radioactive fall-out, Air raid shelters, Materials, Resistance, Shielding, Costs, Specifications, Radiation effects, Blast, Radiobiology, Underground structures, Hospitals, Safety, Radiological warfare, Biological warfare, Chemical warfare, Hazards, Weapons, Public health, *National defense

Lists 168 reports and translations added to the OTS collection through July 1962. Covers research on fallout shelters and other types of protective shelters, air raid protection, shelter materials to resist bombing, shielding, radioactive fallout, cost and specifications for fallout shelters, evaluation of radiation protection, blast biology, underground hospitals, safety measures, atomic warfare, biological warfare, chemical warfare, hazards, weapons, and health physics. (Author)

Savitskii, E. Ya.
BE ON GUARD. 5 Feb 62 [9]p. FTD-TT-61-458.
Order from OTS or SLA $1.10 62-19278

Unedited rough draft trans. from Krasnaya Zvezda (USSR) 1961, no. 268(11568) p. 2.

DESCRIPTORS: Air force, Antiaircraft defense systems, Pilots, Fighter, Air defense command, Radar interference, *Warfare.

Especially great vigilance and constant war preparedness is demanded of the Air Force AA Air Groups and Units. We cannot spare strength and energy in increasing our combat techniques, in continuing to turn out first-class pilots, master of enemy interception at specified assault points, at low altitudes and under complicated meteorological and air conditions. While perfecting the war preparedness of his subordinates, every Air Force commander should proceed from the assumption that the armed forces of the imperialist governments posses very impressive means of attack: long-distance high-speed bombers, and atom and hydrogen bomb-carrying guided missiles, capable not only of operating at extremely high speeds and altitudes, but independently of weather conditions. One must also consider that the enemy will protect himself from counterattack with all his strength by broad application of radar interference. (Extracted)

BOOK REVIEWS

The following book reviews can be ordered by number from OTS or SLA for $1.10 each. Each review includes, in addition to the material shown, a detailed statement of the coverage of the book and detailed table of contents.

BR-SOV/5922
Pashkovskiy, Igor' Mikhaylovich
STABILITY AND CONTROL CHARACTERISTICS OF HIGH-SPEED AIRCRAFT(Osobennosti ustoychivosti i upravlyayemosti skorostnogo samoleta) Moscow, Voyen. izd-vo Min. obor. SSSR, 1961. 349p. Errata slip inserted. 9000 copies printed.

BR-SOV/5924
Akulov, Nikolay Sergeyevich
DISLOCATION AND PLASTICITY (Dislokatsii i plastichnost') Minsk, Izd-vo AN BSSR, 1961. 107p. 3300 copies printed.

BR-SOV/5926
Pavlov, Aleksandr Ivanovich and Yekaterina Leonidovna Poting
THE UTILIZATION OF ALUMINUM ALLOYS IN SHIPBUILDING (Primeneniye alyuminiyevykh splavov v sudostroyenii) Leningrad, Sudpromgiz, 1961, 290p. 3300 copies printed.

BR-SOV/5927
Pogorelov, Dmitriy Alekseyevich
THEORY OF KEPLERIAN MOTION OF BODIES IN FLIGHT (Teoriya keplerovykh dvizheniy letatel'nykh apparatov) Moscow, Fizmatgiz, 1961. 106p. 10,000 copies printed.

BR-SOV/5929
Lavnikov, Aleksandr Akimovich
AVIATION MEDICINE (Aviatsionnaya meditsina) Moscow, Voyenizdat Min. obor. SSSR, 1961. 274p. 8000 copies printed.

BR-SOV/5931
Tret'yakov, Vsevolod Ivanovich
SINTERED HARD ALLOYS: PHYSICAL AND CHEMICAL PRINCIPLES OF THEIR PRODUCTION, THEIR PROPERTIES, AND THEIR FIELDS OF APPLICATION (Metallokeramicheskiye tverdyye splavy; fiziko-khimicheskiye osnoyv proizvodstva, svoystva i oblasti primeneniya) Moscow, Metallurgizdat, 1962. 592p. Errata slip inserted. 3650 copies printed.

BR-SOV/5933
Fridlender, Gavriil Oskarovich, and Mikhail Stepanovich Kozlov
AIRCRAFT GYROSCOPIC INSTRUMENTS (Aviatsionnyye giroskopicheskiye pribory) Moscow, Oborongiz, 1961. 390p. 15,000 copies printed.

BR-SOV/5934
Zakharova, Galina Vasil'yevna and others.
NIOBIUM AND ITS ALLOYS (Niobiy i yego splavy) Moscow, Metallurgizdat, 1961. 368p. Errata slip inserted. 3700 copies printed.

BR-SOV/5935
Bel'chenko, Anatoloy Yakovlevich, and Georgiy Gavrilovich Yatsenko
GROUP METHODS IN PROCESSING MACHINE PARTS (Gruppovyye metody obrabotki detaley mashin) Moscow, Mashgiz, 1961. 182p. 12,000 copies printed.

BR-SOV/5937
Bolotin, Vladimir Vasil'yevich
NONCONSERVATIVE PROBLEMS IN THE ELASTIC STABILITY THEORY (Nekonservativnyye zadachi teorii uprugoy ustoychivosti) Moscow, Fizmatgiz, 1961. 339p. 7000 copies printed.

BR-SOV/5938
Unksov, Ye. P.
INVESTIGATING THE STRENGTH OF TURBINE BLADE MATERIALS (Issledovaniye prochnosti materialov lopatok turbin) Moscow, Mashgiz, 1961. 165p. (Series: Tsentral'nyy nauchno-issledovatel'skiy institut tekhnologii i mashinostroyeniya, kn. 103). Errata slip inserted. 3500 copies printed.

BR-SOV/5939
Kon'kov, Arkadiy Sergeyevich
REDUCING ALLOWANCES IN FORGINGS (Snizheniye pripuskov pri shtampovke pokovok) Moscow, Mashgiz, 1961, 167p. 6200 copies printed.

BR-SOV/5940
Serensen, Sergey Vladimirovich and others.
STRENGTH UNDER NONSTATIONARY LOADING CONDITIONS (Prochnost'pri nestatsionarnykh rezhimakh nagruzki) Kiyev, Izd-vo AN UkrSSR, 1961. 294p. 2000 copies printed.

BR-SOV/5941
Kostin, Sergey Iosifovich, and Taisiya Vasil'yevna Pokrovskaya
CLIMATOLOGY (Klimatologiya) 2d ed., rev. and enl. Leningrad, Gidrometeoizdat, 1961. 485p. Errata slip inserted. 5000 copies printed.

BR-SOV/5942
Romanovskiy, V. I.
MATHEMATICAL STATISTICS. PT. 1: BASES OF THE THEORY OF PROBABILITY AND MATHEMATICAL STATISTICS (Matematicheskaya statistika. kn. 1: Osnovy teorii veroyatnostey i matematicheskoy statistiki) Tashkent, Izd-vo AN UzSSR, 1961. 636p. 1000 copies printed.

TRANSLATIONS IN PROCESS

JOURNAL FOR AGRICULTURAL RESEARCH, 1962
VOL. 15. 5 nos.
PL-480 Arhiv za Poljoprivredne Nauke [i Tehniku]
(Yugoslavia) 1962 [v. 15].

Abrikosov, A. A., Gorkov, L. P., and
Dzyaloshinskii, I. E.
METHODS OF QUANTUM FIELD THEORY IN
STATISTICAL PHYSICS.
Mono. Metody Kvantovoi Teorii Polya v Statisticheskoi
Fizike, Moscow, 1962, 443p.
To be published by Prentice-Hall, Inc., Englewood
Cliffs, N. J.

Karzinkin, G. S.
BIOLOGICAL PRODUCTIVITY OF WATERS.
Unidentified Russian mono.
To be published by AIBS.

Korde, U. V.
BIOSTRATIFICATION AND TYPOLOGY OF RUSSIAN
SAPROPELS.
Mono. [Biostratifikatsiya i Tipologiya Russkikh
Sapropelei, Moscow, 1960, 218p.]
To be published by AIBS.

Lavrenko, E. M. [and Korchagina, A. A.] eds.
FIELD GEOBOTANY.
Mono. [Polevaya Geobotanika, Moscow, 1959].
To be published by AIBS.

Tatevskii, V. M., ed.
PHYSICOCHEMICAL PROPERTIES OF INDIVIDUAL
HYDROCARBONS. recommended values.
Mono. Fiziko-Khimicheskie Svoistva Individual'nykh
Uglevodorodov. Rekomenduemye Znacheniya, Moscow,
1961.
To be published by ATS.

Yasenev, B. P.
DIRECT GEOCHEMICAL METHODS OF PROSPECTING
FOR PETROLEUM AND GAS.
Mono. Pryamye Geokhimicheskie Metody Poiskov
Nefti i Gaza, Moscow, 1962.
To be published by ATS.

PERIODICALS TRANSLATED COVER-TO-COVER

For basic list of Periodicals Translated Cover-to-Cover see Technical Translations Volume 8, Number 1.

This basic list is kept up-to-date by giving only changes in the subsequent issues of Technical Translations.

No changes are necessary for this issue.